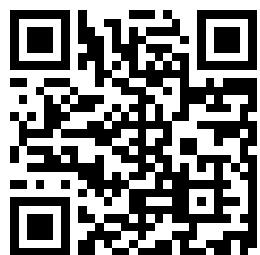

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THE MUSEUM OF MEDITERRANEAN AND NEAR EASTERN ANTIQUITIES

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BULLETIN 21

STOCKHOLM 1986



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**The Museum of Mediterranean and Near Eastern Antiquities
MEDELHAVSMUSEET**

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The Burial of an Egyptian Royal Physician

Bengt Peterson

Two fragments of a coffin of late Old Kingdom or Middle Kingdom type are kept in the Medelhavsmuseet. They are both from the long sides of one and the same coffin, which was made of heavy and rather coarse sycamore boards, in places repaired and held together with pegs. The fragments are designated A (MME 1978:3, 47 × 30.5 × 5.5 cm) and B (MME 1977:12, 52.5 × 37.5 × 5.3 cm). Both fragments have been repaired in modern times. Plaster has been used to join loose parts of both of the fragments. Thus fragment A consists of two joined parts and B of three joined parts. At the bottom of fragment A, there is a rectangular wooden peg used to fix it to the next lower board. At the bottom end of fragment B, there are five rectangular holes made in order to fix it to the bottom of the coffin; a fragment of a wooden peg is still in one of them. On the inside of the upper part of B, there is a

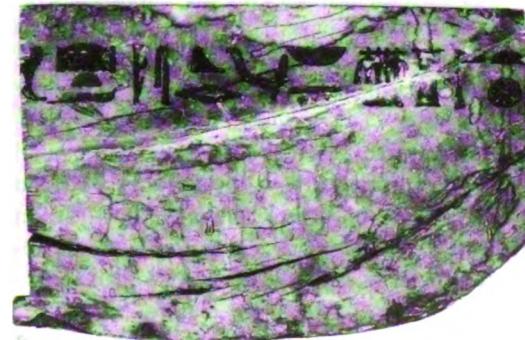
sunk hole meant to receive a wooden beam from underneath the lid of the coffin. Presumably the height of fragment B represents the maximum height of the coffin exclusive of the bottom, as its height corresponds exactly to five Egyptian palms. Further more, there is a straight line of dirt at the bottom of the inside surface which indicates that no further board continued downwards. It is, by the way, important to note that the Egyptian system of measurement is consistently used also in the decoration of the coffin; the hieroglyphs on the outside are exactly three digits high and the registers of the offerings on fragment B are six digits; there is no haphazard, artistic improvisation of the canon in the decorative work.

On the top of the outside, there is the traditional inscription – large, handsome, incised hieroglyphs filled in with green paint – in this case, the invocation to the

Fragment B: MME 1977:12, outside.



Fragment A: MME 1978:3, inside.

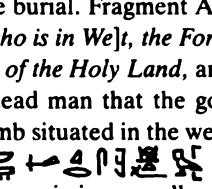
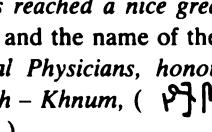




Fragment B: MME 1977:12, inside.



Fragment A: MME 1978:3, outside.

many-epitheted, jackal god Anubis, who was to guarantee the dead man a fine burial. Fragment A begins with the titles of Anubis, [who is in We], *the Foremost of the Embalming Hall, Lord of the Holy Land*, and continues with the wish of the dead man that the god may give him *his burial in his tomb* situated in the western necropolis, (). The last words were in the now missing, small part between fragments A and B. Fragment B begins with the subordinate clause, indicating that the burial is to take place after the deceased *has reached a nice great age*, after which follow the titles and the name of the dead man, *Inspector of the Royal Physicians, honoured by the Great God, Ni - [an]kh - Khnum*, ().

The inside of the coffin was covered with stucco painted with what was probably once white paint but is now yellowish, on which pictures and inscriptions were painted. Fragment A has a long inscription of at least 24 vertical lines in two registers. This is the traditional offering list, in which were specified all the items – mostly food – to be delivered to the deceased. This inscription is much damaged but does not seem to deviate from the traditional renderings. Below are fields in red and which presumably depict the upper parts of granaries. The inside of fragment B has a white-painted, stucco surface, on which are painted three registers full of offerings. In the lower one stand four spouted vessels (only the second one from the right was incorrectly repainted in connection with the repair). In the upper ones, there are plenty of the traditional food offerings, (meat, fruits, vegetables, etc.).

In 1913 a rock tomb was found at Meir on the west bank of the Nile, south of Mallawi. It belonged to the

nomarch and vizier Pepy-anhk-her-ib, one of the mighty men in Middle Egypt during the time of Pepy II of the Sixth Dynasty.¹ In its decoration, we may again and again admire the huge figures of the nomarch and his wife, surrounded by courtiers, most often bringing them food offerings. Not less than nine times, one can observe a man called Ni-anhk-Khnum – called after the ram god Khnum, (*Belonging to the Life is Khnum*) – who has the titles *Inspector of the Royal Physicians, Royal Physician, Inspector of Physicians, Chief of Estate and Lector Priest, (shd swnw pr3, swnw pr 3, shd swnw, mr pr, hry hbt)*. Twice he also appears under the name of Memy () with the titles *Inspector of Royal Physicians*. In this case, the names Ni-anhk-Khnum and Memy are both placed on one and the same single figure.²

As only some fifty Egyptian physicians of the Old Kingdom and some twenty of the Middle Kingdom are known, it is quite possible that the Stockholm coffin fragments may have belonged to one of them, the only Ni-anhk-Khnum in the repertory. The title *shd swnw pr 3* is the same and the name  – only fragmentarily preserved – fits well into the writing of the name in the tomb, which varies: , , , , , .

Ni-anhk-Khnum's own tomb is unknown. But in 1912 Ahmed Kamal participated in excavations at Meir and found, among débris from various plundered tombs, some objects which belonged to this physician.³ There were a wooden head-rest inscribed with the name and title of this man, a fringed leather dress and two leather shirts, and a wooden coffin.⁴ The head-rest is today

preserved in London,⁵ but the location of the coffin is unknown.⁶ Are the Stockholm fragments from this coffin? The outside inscriptions are exactly the same but for one single detail; the inside inscriptions, the offering lists, are not identical. Thus one must assume that the Stockholm coffin belonged to another unrecorded Royal Physician with the same name or that Ni-ankh-Khnum of Meir had two coffins. The latter hypothesis is not improbable, as the custom of having two coffins, one inside the other, is not infrequent.⁷ Kamal records the height of his coffin as 495 mm, which means six Egyptian palms and two and a half digits. If we allow the digits for a bottom, one can see that a coffin five palms high, such as fragment B shows, could easily be encased by an outer coffin six palms high inside. Thus we may think that the Stockholm fragments belonged to the inner coffin of Ni-ankh-Khnum.

In the most recent work on Egyptian physicians (1983), Paul Ghalioungui records Ni-ankh-Khnum and Memy as two different persons.⁸ This is due to his reliance on the second recent list of physicians made by Frans Jonckheere in 1958.⁹ Both of them have used the tomb of Pepy-ankh-her-ib as the source. Jonckheere took, like Blackman in his full publication of the tomb, them both as the same man but Ghalioungui concludes concerning Ni-ankh-Khnum and Memy: *Considering, however, that the first is consistently called swnw pr-3 and the second invariably shd swnw I judge that they were two different physicians.* Apart from the fact that Ghalioungui has not taken the trouble to read the titles in the various instances in the tomb correctly, both he and Jonckheere have neglected the evidence of the coffin published by Kamal. On this coffin, the name Ni-ankh-Khnum is introduced by the  that gives it its quality as *his beautiful name*. This occurs twice in the inscriptions on the long sides. But in the inscription at the foot end, one finds his pet name, Memy, preceded by the title *Lector priest*. With both names on the same coffin, one must conclude that one man bore them. The owner was Ni-ankh-Khnum, *his beautiful name*, his *great name* was Memy. His outer coffin may turn up in a forgotten museum or a private collection one day, and



Ni-ankh-Khnum carrying fowls to his lord Pepy-ankh-her-ib, (*The Rock Tombs of Meir IV*, Pl. VIII).

more fragments of his inner coffin may appear, a few relics witnessing to the life and career of a man who lived some four thousand years ago.

¹ A. Kamal, *Le tombeau nouveau de Méir*, *ASAE* 15, 1915, 209 ff.; A. M. Blackman, *The Rock Tombs of Meir*, Part IV, London 1924; *PM* IV, 1934, 254 f.

² Blackman, op.cit., Pls. VIII, IX, XII, XIV, XVI and XVII.

³ A. Kamal, *Rapport sur les fouilles de Saïd Bey Khachaba au Dér-el-Gabraoui*, *ASAE* 13, 1913, 161 ff., esp. 171 ff.

⁴ *PM* IV, 1934, 256: *Coffins probably from south end of necropolis.*

⁵ F. Jonckheere, *Le cadre professionnel et administratif des médecins égyptiens*, *CdE* 26, 1951, 257, note 7.

⁶ Dr J. Malek, of the Griffith Institute, has most kindly searched for evidence.

⁷ J. Garstang, *The Burial Customs of Ancient Egypt*, London 1907, 164 ff.

⁸ P. Ghalioungui, *The Physicians of Pharaonic Egypt*, Mainz 1983, 19.

⁹ F. Jonckheere, *Les Médecins de l'Égypte Pharaonique*, Brussels 1958, 48 f.; cf. *idem*, *Médecins de Cour et Médecine Palatine sous les Pharaons*, *CdE* 27, 1952, 51 ff.

A Handlist of the Funerary Cones in the Medelhavsmuseet

Bengt Peterson

“Funerary cone” is the name given to mostly cone-shaped, terracotta objects primarily found in the Theban region and mainly of New Kingdom date. The bottom of the cone has a moulded inscription giving the name and title of a person, often also a dedication to a god.

The first funerary cones in the Stockholm collection were acquired as early as 1836–37 by Baltzar Cronstrand during his long stay in Thebes. At this period, nobody knew their kind or purpose. One of the first to recognize their use as part of the tomb decoration was A. H. Rhind, who in his book *Thebes, its Tombs and their Tenants* (1862) points out his discovery in the description of a rock tomb:

“Above the scarp, and flush with it, there remained about two feet of coarse building, in continuation, as it were, of the elevation of the front of the tomb; and I mention this here because, imbedded in the building, and stretching very nearly its entire length, were two rows of clay cones, impressed with a hieroglyphic subject on the ends turned to the light. Cones . . . have been constantly found in the sand about the entrances of tombs. They are usually from ten to fifteen inches long, tapering often to a point at one end, and presenting at the other a surface some three or four inches in diameter, on which is embossed a religious group, or a short hieroglyphic text of invocation, or such like, containing the name and status of the deceased person to whom it refers. They have been called the seals with which the closed and plastered entrances of sepulchres had been secured; but it was pointed out, that as the figures they bore were in relief and not in intaglio, they must have received rather than were calculated to transmit an impression. Of the great number in existence, it does not appear that any before had, in observed instances, been met with in any definite posi-

tion, as they were merely dug up among the *débris*, with little clue to their probable destination. But the mode of their occurrence here would seem to show distinctly . . . that . . . their direct purpose was ornamental, like an inserted entablature or frieze. In the present case their number was nearly ninety, all stamped with the same impression.”¹

These rather insignificant objects have given rise to much unnecessary discussion; different interpretations have been suggested without observing the archaeological fact stated by Rhind. A brief summary of the research situation was made by L. Borchardt and his collaborators in 1934² and was recently repeated by A. Eggebrecht.³ Most of the cones known were assembled and published in a Corpus by N. de Garis Davies and M. F. Laming Macadam in 1957,⁴ to which important supplementary material was added by, *inter alia*, A. Heyler in a review article.⁵ In the Corpus, parallels to 19 of the 20 different types in the Stockholm collection are to be found. Thus this list of the Stockholm cones does not add any new evidence to the prosopography of Pharaonic Egypt. However, the charming fact that a whole gallery of persons comes to life in this material has often been overlooked. A haphazard collection like this in Stockholm, all the items of which were collected without any archaeological documentation and were most often given to the Museum by private persons, could yield an interesting view of life in the Egyptian capital during the flowering of the New Kingdom. Let us have a look at the persons appearing.

The dominating factor in Theban religious and economic life was the great temple of Amun at Karnak. Its main function was to serve the god who had his home in the temple. The mighty priesthood included several cadres of priests with various functions. Among the temple services, one could find the priests cleaning the

food offerings with water and incense. A leader of these was Thutmose, "Chief of Amun's purification priests" (20). Another man of the 18th Dynasty called Khawet (12) had a special designation as a "Front purification priest", i.e. a leader of the processions when the statue of the god was carried around in its holy bark. Furthermore he had an administrative post as a "Deputy in Amun's Palace". We also know the name of his wife Tanetmut, a chantress in the court of the god. From their tomb there comes, without any doubt, a pyramidion in the British Museum with representations of the mortuary gods Osiris and Anubis, in front of which the man is kneeling.⁶

Around the huge temple on the east bank of the Nile were several administrative offices. Not only the clergy but also the financial and administrative staff of the god were always busy. The natural products of fields and gardens, cattle and small animals were to be taken care of. Thus Neferkhawet (10) was not only "Chief of Amun's fields" but also "Director of Amun's beehives". He had further the title of "Purification priest". That (19) represents another category of functionaries



The place of cones on a tomb after a New Kingdom representation, (Theban Tomb 181).

Some of the funerary cones in the Medelhavsmuseet.



as "Director of Amun's craftsmen". Among the general directors one can find important men like Inen (3), later Mayor of Thebes during the first half of the 15th century B.C., who filled the posts of "Director of Amun's Double Granary" and "Director of everything sealed in the Palace of Amun". His first title – that of "Scribe" – is still in the row of titles on his cone but the first in the row is "Mayor". He was a very well-known man with many special royal commissions. Among the scribes, we encounter two others, Kenna (17), working as a "Secretary of the Highpriest of Amun", a "writer of letters", and Kener (16), a "Scribe of the Treasury of Amun". Further we have also Nekhtsobek (11), a "Director of the Palace of Amun".

The Palace of Amun was not the only great employer. On the west bank of the Nile, the huge, royal, mortuary temples were situated, a long row of them on the plain in front of the hills from which the tombs were hewn. Of course, they had their own priesthood, their own administration and their labourers on the freehold land belonging to the mortuary estate of the deceased king. Even before the temple and tomb were ready, the mortuary foundation was at work. Inheretmes (4) was a "Scribe of Building of the Mansion of Nebmaatre in Western Thebes", a functionary at the building of the greatest of all mortuary temples, that of Amenophis

III, of which today almost only the two colossi of Memnon are extant. This temple was also served by Sobekmose (13), who was the "Chief purification priest" during the Ramesside period and also a special priest of Ptah-Sokar, a nether-world god with a chapel in the mortuary temple of Amenophis III. Among the royal priests, one finds Amenmose (1), "High priest of Aakheperkare", i.e. of Thutmose I, a man having power enough to usurp an old tomb in the necropolis, where his cones marked the new ownership. In the very small temple of Thutmose III, Kaemamun (15) was the "Second Prophet of Menkheperre". His wife was also connected with the temple service as a chantress. The family is also known from inscriptions on statues in Leyden and Paris.⁷ From the Leyden one, we also learn that Kaemamun was of royal birth, his mother was the queen Henuttau.

Leaving the world of temples and turning to the royal and civil administration, we find first a son of Amenophis III, Mermose (9), who filled the position of "Viceroy of Nubia", "King's Son of Kush". He was one of an important succession of officials who took care of the province south of Aswan. Then we meet for the second time Inen (3). Coming from Amun's administration, he was appointed "Mayor" of Thebes. Another man called Min (8) has the title "Mayor of the Oasis", having probably served in the western desert. He is also "Chief of the Prophets of Osiris" and "Scribe". Weserhat (5) is a well-known person as "Director of the Royal Harim". His father was a judge and we also know the names of his mother and wife, a family flourishing during the long and peaceful reign of Amenophis III, of whom we also know that he had very many wives in his harim for Weserhat to look after. It was at Weserhat's tomb that Rhind found the cones *in situ*. There are also a few persons difficult to assign to special offices and places: Thay (18), a "Chief of merchants (?)", Paweh (6), a "Scribe", and his wife, also a man called Min (7) with the old nobility titles of "Count" and "Prince" and the more prosaic "Director of the Seal", and finally Amenhotep (2) and his wife Ba, lacking special titles.

Of a later period is a cone with a figural representation. Two persons are kneeling and above them comes the solar bark. They are both of them "Followers of the Divine Adoratrice". Shemetemkhetef and Takapwet (14) are 26th Dynasty persons belonging to the peculiar court established for the royal ladies ceremonially married to the god Amun. The identities of these persons have recently been discussed by J. Assmann and H. Graefe on the basis of new finds of variant inscriptions

in the Theban necropolis.

Unfortunately most of the tombs of the persons mentioned are unknown. Among the few that can be located, that of Inen (3) is the finest and has beautiful paintings. It is situated in Sheikh abd el Qurna, like the one which Amenmose usurped (1). The viceroy Mermose has a small tomb with only the burial chamber preserved in Qurnet Murai (9), where we also find the tomb of Sebekmose (13). Finally Weserhat has his tomb in Khoka (5), another fashionable district of the Theban necropolis.

The religious significance of the inscriptions is evident. The usual phraseology of tomb inscriptions is used. The person mentioned is very often called "the revered one with Osiris", sometimes also "true of voice with the great god". The gods are often evoked, "Amun is praised by ..." is an example of an initial formula. Other inscriptions reflect the wish of the dead to be connected with the sun, "to behold Re in the morning and breathe the sweet wind". Osiris is the god who guarantees the necessary food offerings and he is prayed to as "Osiris, the lord of eternity, the Ruler of perpetuity" or the "Great god, Lord of the West", asking for offerings.

1. Name: *jmn-ms*

Titles: *hm-ntr tpy n 3-hpr-k3-r*

Inv.no.: MME 1969:36

Corpus no.: 371 (variants 372 and 484)

Personal references: Usurper of Theban Tomb 51; H. Kees, *Das Priestertum im ägyptischen Staat*, Leyden and Cologne 1953, 137; W. Helck, *Materialien zur Wirtschaftsgeschichte des Neuen Reiches*, Mainz 1961, 89

2. Name: *jmn-htp*, wife *b3*

Titles: -, wife *nbt pr*

Inv. no.: MM 15445 (brick with impressions of six seals)

Corpus no.: 33

Personal references: -

3. Name: *jnn*

Titles: *h3ty-*c*, mr šnwty n jmn, mr sd3wt nbt m pr jmn, ss*

Inv. no.: MM 10062

Corpus no.: 480

Personal references: Owner of Theban Tomb 81; Helck, *Zur Verwaltung des Mittleren und Neuen Reichs*, Leyden 1958, 419 ff.; Helck, *Materialien, passim*

4. Name: *jnhrt-ms*
 Titles: *ss n t3 k3wt (n) t3 hwt nb-m3t-r hr jmnn w3st*
 Inv.no.: MME 1961:113
 Corpus no.: 430 (for the reading of the king's name, cf. Heyler, *Kêmi XV*, 1959, 91)
 Personal references: Helck, *Der Einfluss der Militärführer in der 18. ägyptischen Dynastie*, Leipzig 1939, 6, note 1; E. Otto, *Topographie des thebanischen Gau*s, Berlin 1952, 113; Helck, *Materialien*, 99

5. Name: *wsr-h3t*, father *nh*, mother *snnw*, wife *m-j3y*
 Titles: *mr jpt-nswt*, father *s3b*, wife *nbt pr*
 Inv.no.: MM 15460, 15461, 15462, 15463, 15464, 15465, 30693
 Corpus no.: 406
 Personal references: Owner of Theban Tomb 47; cf. Helck, *Verwaltung*, 262

6. Name: *p3-w3h*, wife *hnwt-wdbw*
 Titles: *ss*
 Inv.no.: MM 17980
 Corpus no.: 117
 Personal references: –

7. Name: *mnw*
 Titles: *rp, h3ty-, mr sd3wt*
 Inv.no.: MM 15454, 15455, 15456, 15457, 15458
 Corpus no.: 499
 Personal references: –

8. Name: *mnw*
 Titles: *h3ty- n wh3t, mr hmw-ntr n wsjr, ss*
 Inv.no.: MM 15459
 Corpus no.: 222
 Personal references: Helck, *Materialien*, 166

9. Name: *mr-ms*
 Titles: *s3 nswt n kšy*
 Inv.no.: MME 1964:11, 1964:12, 1969:37, 1969:38
 Corpus no.: 170
 Personal references: Owner of Theban Tomb 383; Helck, *Verwaltung*, 281, 403; Helck, *Materialien*, 31

10. Name: *nfr-h3wt*
 Titles: *mr 3hwt n jmn, hry bjtyw n jmn, w-b*
 Inv.no.: MME 1973:18
 Corpus no.: 405
 Personal references: Helck, *Materialien*, 34 (name read *nfr-3bt* by Helck)

11. Name: *nht-sbk*
 Titles: *mr pr n jmn*
 Inv.no.: NME 882 b, 882 c, 882 d
 Corpus no.: 144
 Personal references: Other examples found at Qurnet Murai; cf. *BIFAO* 16, 1919, 169 ff.

12. Name: *h3wt*, wife *t3-(nt)-mwt*
 Titles: *w-b n h3t jmn, jdnw m pr jmn*, wife *šmcyt n jmn*
 Inv.no.: MM 17981
 Corpus no.: 465
 Personal references: Helck, *Materialien*, 38; cf. *Topographical Bibliography I:II*, 836

13. Name: *sbk-ms*
 Titles: *hry w-b*
 Inv.no.: MME 1973:17, 1980:36
 Corpus no.: 501
 Personal references: Owner of Theban Tomb 275

14. Name: *šmt-(m)-h3f & t3-k3p-wt (?)*
 Titles: *šmst n dw3t-ntr* (both)
 Inv.no.: MME 1973:19
 Corpus no.: 608
 Personal references: E. Graefe, *Untersuchungen zur Verwaltung und Geschichte der Institution der Gottesgemahlin des Amun vom Beginn des Neuen Reiches bis zur Spätzeit*, Wiesbaden 1981, I, 95; J. Assmann, *Das Grab der Mutirdis*, Mainz 1977, 16

15. Name: *k3-m-jmn*, wife *mryt-r*
 Titles: *hm-ntr snw n mn-hpr-r*, wife *šmcyt*
 Inv.no.: MM 14152
 Corpus no.: 228
 Personal references: Kees, *Priestertum, Nachtrag*, 9; Helck, *Materialien*, 95; cf. A. de Buck, *JEOL* 15, 1957–8, 5 f.

16. Name: *knr (kn-r3)*
 Titles: *ss pr hh [n] pr jmn ...*
 Inv.no.: MM 15466
 Corpus no.: – (this is a type of “Friesiegel” not included in the Corpus, a brick with two seal impressions. The fragmentary inscription is supplemented by the parallel in *ZÄS* 70, 1934, 26.)
 Personal references: –

17. Name: *knn3*
 Titles: *ss šct n hm-ntr tpy n jmn*
 Inv.no.: NME 882a
 Corpus no.: 433
 Personal references: Helck, *Materialien*, 52

18. Name: *t3y*

Titles: *hry swty*

Inv.no.: MM 13893, 15446, 18464, 30694

Corpus no.: 311

Personal references: Examples found at Sheikh abd el Qurna; cf. *JEA* 62, 1876, 35

19. Name: *t3-t3*

Titles: *mr hmwt nb n jmn*

Inv.no.: MM 15375

Corpus no.: 106

Personal references: Helck, *Materialien*, 46

20. Name: *dhwty-ms*

Titles: *3 n w-b n jmn*

Inv.no.: MM 30040, NM 1021

Corpus no.: 271

Personal references: Examples found at Dra abu el-Naga; cf. *BIFAO* 6, 1908, 129

¹ A. H. Rhind, *Thebes, its tombs and their tenants ancient and present*, London 1862, 134 ff.

² L. Borchardt, O. Königsberger & H. Ricke, Friesiegel in Grabbauten, *ZÄS* 70, 1934, 25 ff.

³ A. Eggebrecht, Grabkegel, *Lexikon der Ägyptologie*, Band II, Wiesbaden 1976, 857 ff.

⁴ N. de Garis Davies & M. F. Laming Macadam, A corpus of inscribed funerary cones, Oxford 1957.

⁵ A. Heyler, Note sur les “cônes funéraires” à propos du récent corpus de Davies-Macadam, *Kêmi XV*, 1959, 80 ff. A recent work lists a considerable number of cones in London: H. M. Stewart, *Mummy cases & inscribed funerary cones in the Petrie collection*, Warminster 1986.

⁶ British Museum, *A guide to the Egyptian galleries (Sculpture)*, London 1909, 155, no. 558.

⁷ A. de Buck, Een zwerver thuisgebracht, *Jaarbericht no. 15 van het vooraziatisch-egyptisch genootschap*, Leyden 1957–58, 5 ff.

Shrew Mouse and Ichneumon as Divinities

Bengt Peterson

A person acquainted with, say, the teachings of Swedenborg will not be astonished to learn that the shrew mouse and the ichneumon were, to the ancient Egyptians, apparitions of the mighty god, the power of the cosmic totality. Many were, in fact, the animals of the Egyptian pantheon, from scarab to falcon, from fish to crocodile, from cat to bull. All of them were in one way or another at the same time symbols of exclusive power and themselves living parts of that power. Some animals were predominant symbols of the cosmic totality. One of them was the falcon, mostly under the name of Horus. The eyes of this god, sun and moon, could be represented by these two animals, the shrew mouse and the ichneumon. Thanks to the interpretation of Emma Brunner-Traut (*Spitzmaus und Ichneumon als Tiere des Sonnengottes*, Göttingen 1965), we have learnt to recognize this mythological connection. Therefore we can better identify and understand the archaeological remains, such as bronzes and coffins, among others, exemplified by items kept in the Medelhavsmuseet. They are mostly testimonials of a popular religion which – although very ancient – was especially predominant in the Late period. And the ichneumon was still in the Roman Imperial period the heraldic animal used on local coins of some Egyptian nomes.

The shrew mouse was worshipped in connection with Horus *Mhntj-(n)-irtj*, mostly in Lower Egypt but also in a few cities in Upper Egypt. The Medelhavsmuseet possesses six examples of bronze votive offerings with no exactly known provenience. Perhaps two of them come from Sakkara. One of them represents the shrew mouse standing, while the others are small votive coffins with a shrew mouse standing on the top, in one case, even two of them. In the coffins were placed mummies of the cult animal; in our examples, there are, however, no remains inside.

MME 1969:191

Standing shrew mouse. Simplified stylized rendering. L. 9.1 cm, h. 2.7 cm. Ex R. Holtermann Collection.

MM 19258

Coffin with standing shrew mouse. Coffin open behind. L. 7.5 cm, h. 3.4 cm. Bought from the Egyptian Antiquities Service in 1935 by Crown Prince Gustaf Adolf on behalf of the Stockholm Egyptian Museum. Probably from Sakkara, as it was bought from the reserves there. The measurements of this figure probably represent an ideal canon as the length is exactly 1 palm, the width 1 digit and the height of the coffin also 1 digit.

MM 19464

Coffin with standing shrew mouse. Crude modelling; corroded. Coffin – partly damaged – open behind. L. 6.9 cm, h. 3.4 cm. Bought from the Egyptian Antiquities Service in 1935 by Crown Prince Gustaf Adolf on behalf of the Stockholm Egyptian Museum. Probably from Sakkara, as it was bought from the reserves there.

MM 30143

Coffin with standing shrew mouse. Front part of coffin damaged, open behind. Realistic modelling of the animal with characteristic details, such as the dorsal line on the nose. L. 8.8 cm, h. 4.2 cm. Unknown acquisition.

MM 30144

Coffin with standing shrew mouse. Coffin in the shape of a naos, open behind. The animal's nose is broken; hence the ichneumon look of its head. L. 5.6 cm, h. 3.3 cm. Bought in 1953 from a private person.



Shrew mice in the Medelhavsmuseet.

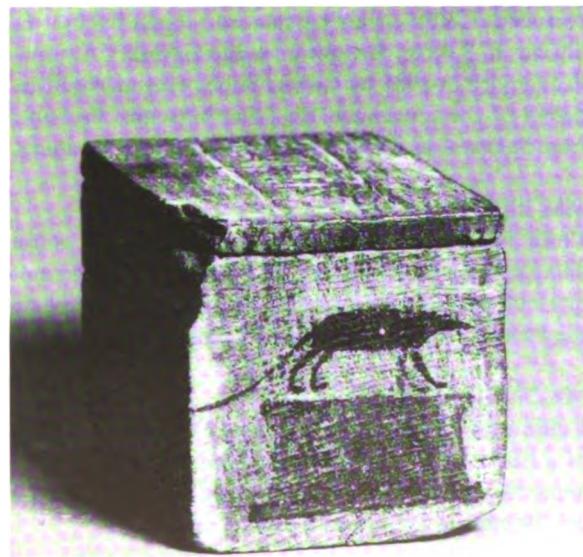
SHM 3938:2

Coffin with a pair of standing shrew mice. One of them and the upper part of the coffin damaged. Coffin open behind. L. 9.4 cm, h. 3.6 cm. Given to the Museum of National Antiquities in 1868 by F. W. Spiegelthal, Consul in Smyrna. Transferred to the Egyptian Department of the Medelhavsmuseet in 1981.

Another quite interesting monument in the Medelhavsmuseet is a small wooden coffin for the mummy of a shrew mouse.

MME 1977:17

Wooden coffin for the mummy of a shrew mouse. The flat sliding lid is painted in white and decorated down the centre with a band of hieroglyphic inscriptions on gilding. At one end of the coffin, there is a drawing of a shrew mouse standing on a naos. L. 8.6 cm, w. 5.6 cm, h. without lid 5.0 cm. Ex Collection of the Rev. W. Frankland Hood (d. 1864). He visited Egypt several times between 1851 and 1861. His collection was sold at Sotheby's on 11 November 1924, the coffin being item No. 156. The coffin belonged later to the Ernest Brum-



The wooden coffin for a shrew mouse.

mer Collection and was sold at Sotheby's on 16–17 November 1964 as item No. 116 b. The vertical one line inscription illuminates the fact that the shrew mouse was associated with Horus as it mentions the coffin as belonging to Osiris Horus. The epithets following the name of Horus are unfortunately difficult to decipher in full.

There are two different types of the representations of the ichneumon. One of them is quite similar to the shrew mouse votive offerings and bronze coffins; sometimes it can be difficult to distinguish between the two animals, as the representations are often simplified, even corrupt. However, of this type, there is one example which we would like to identify as an ichneumon, owing to the shorter nose, its walking instead of standing position and its genitals.

MM 13760

Walking ichneumon on a base. Loophole on the back. L. 8.0 cm, h. 3.2 cm. Given by Charles Molin in 1943. Cleaned from heavy corrosion.

The other type is the upright, standing ichneumon, which had a connection not only with Horus but also with the cobra goddess Wadjet of Letopolis, as is shown by the inscriptions on the bases of several figures. In one of the Stockholm examples, the ichneumon is carrying her effigy, a cobra on his head. It is often shown standing on a papyrus column or on a naos.

NME 509

Upright, standing ichneumon on a naos. Cobra on his head. H. 18.8 cm. Has belonged to the Egyptian collection of the National Museum since before 1866. Transferred to the Medelhavsmuseet in 1983.

MME 1979:7

Upright, standing ichneumon on a naos. Some small damages and repairs. H. 14.3 cm. Bought from a Swedish private collection.



Ichneumons in the Medelhavsmuseet.

World War I and the Formation of a Miniature Museum

Bengt Peterson

The disaster of the Gallipoli expedition in 1915 was tremendous. Some 110,000 British soldiers met their fate at the Dardanelles. One of the survivors was Arthur Vivyan Cornish. He had fought in South Africa in 1900–1; now he was fighting again. After Gallipoli, he was to spend 1916–17 in the serene quietness of the Egyptian deserts; in 1917–18 he was transferred to Palestine. During these campaigns, he was always ready to assemble small antiquities and curios that came his way. After the end of the war, he mounted his small collection in a glass case, having formed a miniature museum, which is now kept by the Medelhavsmuseet (inv. no MME 1984:34).

One object which had followed him through the war was included in the collection. It was a "Swedish hunting knife with walrus tooth handle. Carried by the owner during the war through Gallipoli, Egypt and Palestine and used in dressing wounded". Another object is a kind of war souvenir which gave the present writer a clue to the identification of the owner. It is the carved shell of a nut with the inscription: GALLIPOLI · EGYPT and the monogram AVC, and on the verso WEST SOMERSET YEOMANRY S AFRICA 1900–01, with the addition of a heraldic animal.

The first antiquities to be collected were two glass beads "dug up while trenching at Suvla Bay, Gallipoli 1915", a nice green one and an opalescent one, fine things to carry like a small treasure in the trenches. As a contrast, Cornish also brought into his collection a small tin full of "Turkish lead shrapnel and rifle bullets picked up at Suvla Bay, Gallipoli 1915".

After the end of the Dardanelles expedition, the West Somerset Yeomanry was sent to Egypt. In 1916 we find Cornish in the oases of the western deserts, in Khârga, which was then already connected by a railway with the Oasis Junction on the line from Cairo to

Luxor, about ten hours from the junction, and in Dâkhla to the west of Khârga, to be reached by motor car in about nine hours or by camels in three or four days from Khârga.

In Dâkhla, Cornish collected ethnographical specimens like a "Native date cutting knife", a "Key of Senussi stable from Belat", a township in the oasis, and a "Senussi razor", Senussi being the name of members of a religious movement of much influence in the western oases.

Similar objects from Khârga are a "Metal anklet worn by native woman at Kharga village", "Silver anklet worn by a native child at Kharga village" and a "Silver bangle worn by a native woman at Kharga village". A silver finger-ring with a green glass bead and a plain silver finger-ring with a hall-mark may likewise come from Khârga or Dâkhla.

Of great age were, however, eleven flint implements and a quartz implement found at Khârga. They are all mounted in the lower half of the case and represent various types of prehistoric artefacts easily found on the surface of the desert. They come from three separate sites: Sherika, Mahariq and Khârga village within the oasis; a fourth site just called "Water Dump A" may be difficult to localize. A thorough study of the lithic cultures of this oasis was made in 1928–31 by Gertrude Caton-Thompson.

Egypt proper was also visited by Cornish. There are objects from Luxor, Helouan and Alexandria. The largest collection is from the Luxor area: "Ancient Egyptian amulets, scarabs, scarabaeoids, beads, rings, gods and goddesses, etc. mostly found near Kharnack and Luxor, Egypt". Most of them are objects of Egyptian faience and their date is predominantly in the last millennium B.C. Of course, objects of this kind could easily be found in the tomb areas of Luxor, but most probably



Cornish bought them from itinerant pedlars who have always been eager to serve the lonely wanderer in the ancient metropolis of Egypt.

There are some 35 amulets of various types, mostly used for mummies: the eye of Horus, Patek, Thoeris, the winged scarab, the crown of Lower Egypt, the papyrus column (also in a rare shape, crowned by the head of a falcon), the pillar of eternity, the head of Hathor, the sons of Horus (jackal-, baboon- or human-headed), the Horus falcon, Bes, the Thoth baboon, the Isis knot, the sign of life, the Bastet cat, etc.

Further, one finds 14 scarabs, scaraboids and plaques, some of them with interesting designs, like the sun boat or the figure of an ichneumon. There are also royal names: a plaque with the name of a Sesostris and a scaraboid in the shape of a duck with the cartouche of Queen Tiy.

Adornments are four beads and a cornelian hair-ring, further a blue-glaze finger-ring with the figure of Bes. There are likewise five strings of mummy beads. Among various items are an eye for an inlay, a gaming piece, a blank lapis-lazuli plaque and a rock-crystal gem stone incised with the image of a Hellenic goddess, Artemis with bow and arrows.

Further, there are three shabtis, all Late Period types without inscriptions and, of bronze, an arrowhead and a much corroded figure of Osiris and a sun disk with horns and cobra, originally part of a large figure.

From Helouan comes only a small flint implement, a pygmy flint which can be associated with the Omari Neolithic sites to the north of Helouan. It is, of course, a surface find of common occurrence.

One may hope that Cornish had some leisure time in Alexandria. He collected a small, Roman, bronze weight from the Nuzha Garden, an attractive public

resort on the Mahmûdiya Canal. From the San Stefano area came a leaden, coin-shaped, Coptic amulet.

Finally, Cornish participated in the Palestine campaigns. In 1917 he picked up a small piece of black stone from the "Floor of Mosque, Gaza 1917", and there is also a "Turkish ear-ring dug up in an old camp near Gaza", the latter a pierced Ottoman coin. The more trivial objects include a "Turkish cobbler's wooden peg box" from Tel el-Sheria, 5.11.1917, full of pegs, and the more valuable a small gold coin of the British East India Company of the late 18th century; the place of its acquisition is not recorded.

Who was the collector? With the valuable aid of the Local History Librarian of Somerset County Council, David Bromwich, MA, ALA, I am glad to be able to introduce him as Arthur Vivyan Cornish, who in 1911 became a member of the Somerset Archaeological and Natural History Society. His father was the Rev. Hubert Walter Cornish, rector of Odcombe from 1906 to 1926. Mr Bromwich has also confirmed that the West Somerset Yeomanry served in the Dardanelles in 1915, in Egypt and Sinai in 1916-17, and in Palestine in 1917-18. After the war, Cornish lived in Minehead and was known as a contributor to local journals and very often published in *The Somerset Year Book* articles on local history and natural lore, such as "The return of the red squirrel to Somerset" or "Ravens in Somerset". He died about 1960.

Arthur V. Cornish also collected artefacts from Britain. Thus he mounted and labelled a small collection of items dating from Roman Britain in a small case, which is also in the possession of the Medelhavsmuseet. One may hope that the Museum's Roman specialists will manage to publish it.

A Standing Male Figure from the Middle Kingdom

Ingegerd Lindblad

This figure came into the possession of the Egyptian Museum in Stockholm in 1933 (Figs. 1–7).¹ It was a gift from Professor Hermann Junker and was said to originate from El Katatbe in the Delta, like two other fragmentary Middle Kingdom statuettes at the Museum.² The provenance indicated is a secondary annotation in the Museum's inventory; there is no reliable evidence as to the actual find or purchase of the figures at El Katatbe.

The material is a fine-grained, blackish hardstone, possibly basalt.³ The max. height is 22 cm, the max. width 10 cm and the max. depth 8.5 cm. The height of the face is 3.4 cm and the width 3.5 cm. The figure is broken off below at about knee-level. The nose is smashed and the eyebrows, towards the root of the nose, are damaged. The surface below the chin is rubbed. The left hand is damaged below. The top of the back pillar is chipped.

The standing male figure is stepping out with his left leg. The right arm is hanging down at the side, the fisted hand holding a folded ribbon with two unequally long ends hanging down at the back.⁴ The left arm with the hand open is folded across the breast. At the back, there is an uninscribed pillar. The rounded, tapering top ends right above the neck. The man is dressed in the *šndwt*, plaited in raised relief. The plain, unadorned belt descends in a curve below the navel. The head-dress is of a close-cropped type, leaving the ears bare. The rectangular "curls" are arranged radially from the crown of the head.

The anatomical details of the body are rather distinctly rendered. The trunk is long and slender in contrast to the short, massive neck and heavy arms. The collar-bones are plastically very subtly modelled far below the shoulders. The nipples are marked by two circles in raised relief. The navel is rendered as a circu-

lar groove at the bottom of a drop-shaped depression. The arms are powerful in the modelling. The muscles of the upper arms are clearly rendered, as are the muscles at the preserved right knee. The nails are plastically modelled.

The face is rounded, with a flattish, receding forehead.⁵ The chin is rounded *en face*, while showing an almost vertical outline in profile. The base of the chin descends strongly towards the neck. Both jaws seem set in front of the root of the nose, the upper well in front of the lower one. The yokebones are emphasized. In three-quarter profile, the maximum protrusion of the cheek is located at that level. There are deep depressions below the eyes, as well as along the nose. This modelling makes the volume of the cheek especially evident at the level of the wing of the nose, while rapidly decreasing towards the chin.

The elongated eyes are rather almond-shaped, almost horizontally situated and rather wide apart. The rim of the upper eyelid is executed as a jutting edge, that of the lower is plain. The inner canthi are prolonged and well defined. The eyeballs are globular; the iris is marked by a circle in raised relief. The eyebrows are not separately modelled but are rather made to appear by a deep groove between the upper eyelid and the superciliary arch. Thus the shape follows the curvature of the eye, more or less.

The badly smashed nose is slightly broader than the distance between the eyes.

The mouth is broader than the bottom of the nose and positioned more to the left side of the face. The expression is a serious one. The thicker upper lip has a softly curved Cupid's bow and diminishes in thickness towards the corners of the mouth. It has a convex shape in profile and is set well in front of the lower lip. The lower horizontal lip is thinner and shorter than the



Fig. 1, MM 11236.



Fig. 2, MM 11236.

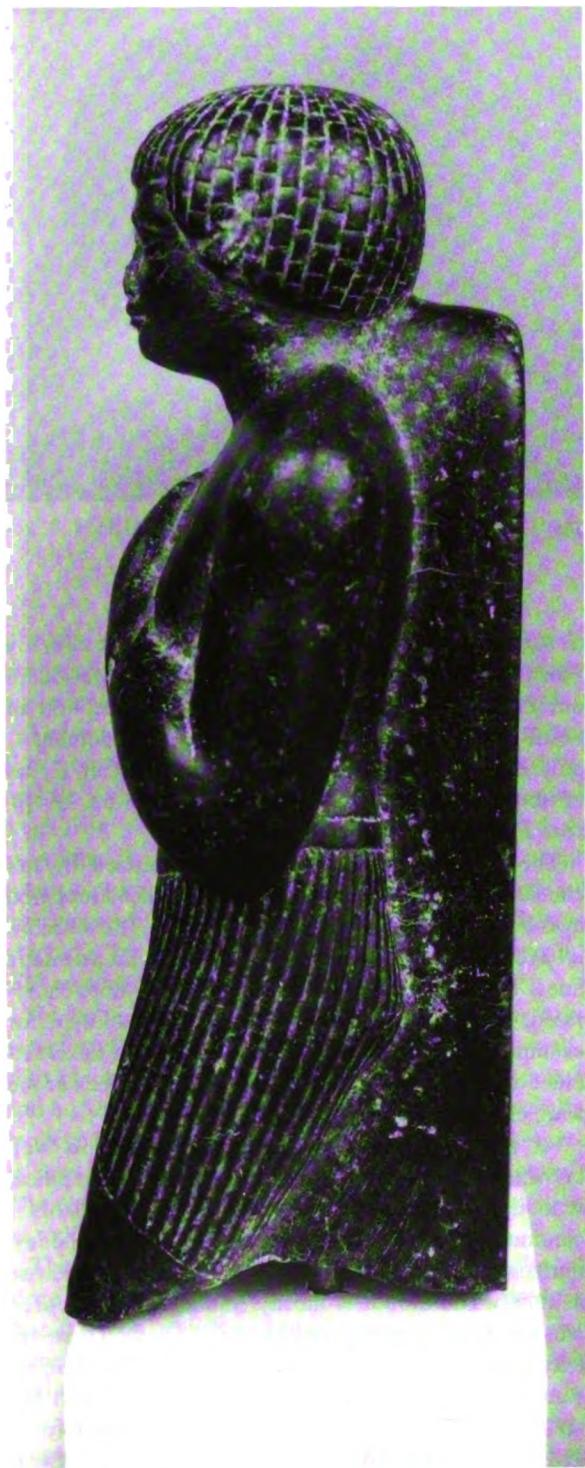


Fig. 3, MM 11236.

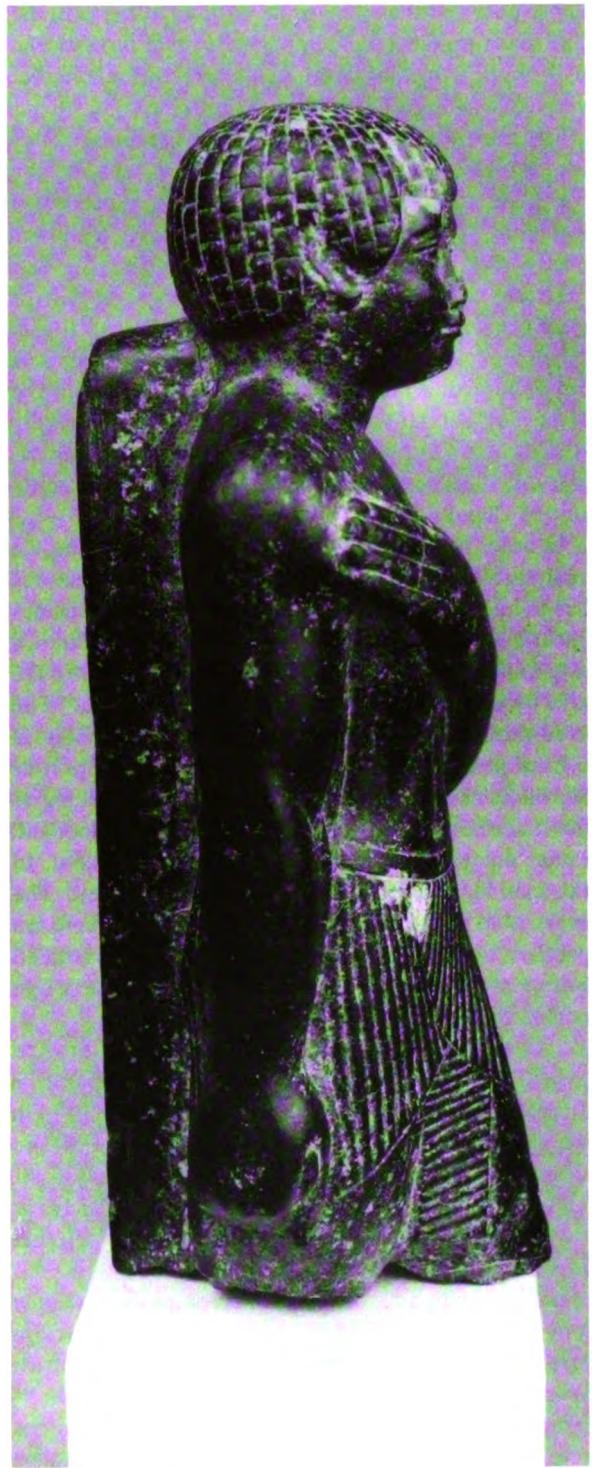


Fig. 4, MM 11236.

upper one, and thus the lips do not join at the corners. The lower lip has a flat, jutting surface in profile. The philtrum has vertical contours *en face* and a concave, very jutting shape in profile.

The ears are very schematic in the execution. They are narrow and very tilted and flat, except for the rounded ear-lobes. The right ear is positioned much lower down (as is that side of the head-dress); the lower edge is at the level of the bottom of the nose.

Except for the trunk, the main impact is that of vigour and heaviness, explicit in the powerful limbs, short neck and the head, which is broader than it is long. The face is modelled in a style that is a mixture of linear and painterly formal means. Although basically schematic, realistic features are expressed, as in the execution of the upper orbital area and the softly curved Cupid's bow.

In order to date an uninscribed piece of a statue, an analysis of the iconographic details and stylistic features has to be undertaken. The iconography alone excludes an origin in the Old Kingdom. There are no known single statues of males depicted in this attitude with the arm across the breast and with the hand open.⁶ The head-dress does not fit, nor is the *šndwt* common on private persons in this period. The general impact of heaviness caused by the proportions and modelling of the shapes contradicts a date in the New Kingdom and rather points to an origin in the Middle Kingdom. In this period, the iconography would fit as well. The *šndwt* is no longer a sign of the privileged⁷ and there are parallels to the head-dress.⁸ The attitude demonstrated by this statue is also paralleled and interpreted as a sign of devotion.⁹

The statuette is definitively to be dated before the formal change that took place in the time of Sesostris III, resulting in a "Spiel von Licht und Schatten".¹⁰ On the other hand, it shows too integrated features and shapes to have originated in the Eleventh Dynasty. Thus the earlier part of the Twelfth Dynasty remains as a possible time of origin, i.e. the reigns of Amenemhet I to Sesostris II.

In Egyptian art, the royal sculpture is generally looked upon as a "prototype" for the private sculpture.¹¹ This has lately been questioned by Dietrich Wildung, who argues for the opposite state of affairs.¹² However, his theory implies modern thinking on the role of the artist in ancient Egypt and remains to be proved. According to Vandier, the details on the faces of the private statues imitate those of the contemporary royal statuary, although they are not necessarily alike



Fig. 5, MM 11236.

as regards the general impression.¹³ Unfortunately, the "securely" dated, royal sculpture from the period in question is poorly represented, with the exception of Sesostris I.¹⁴ There are two statues of Amenemhet I, only one, a sphinx, attributed to Amenemhet II, an attribution that could be disputed, four statues of Sesostris II and two of his queen, Nofret.¹⁵

The face of Amenemhet I is characterized by full cheeks with emphasized yokebones, rather elongated eyes and a schematically modelled mouth. The horizontal eyebrows are executed in relief, as are the cosmetic lines. The three-dimensional relationship is more elaborated, compared with the statues of Mentuhotep; for example, the depressions below the eyes and the treatment of the plastically modelled fold of the cheek at the wing of the nose.

As regards the statuary of Sesostris I, it is well known, and authors distinguish different topographical schools.¹⁶ On the whole, the style of the predecessors is continued, i.e. full cheeks with emphasized yokebones, horizontal eyebrows in relief and cosmetic lines likewise in relief. The mouth is mostly smiling and contoured and has a more or less conical Cupid's bow. There are exceptions to the above-described type; the Osiride statues from the mortuary temple at Lisht¹⁷ and the uninscribed wooden statuettes found at a private tomb at Lisht and generally assigned to Sesostris I.¹⁸ Evers describes the Osiride statues as made of clay.¹⁹ It is true that these statues give a softer impression, with plastically modelled eyebrows and mouths that show a ten-

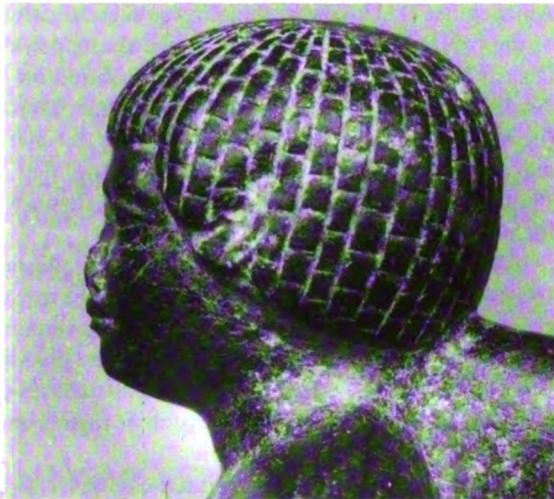


Fig. 6, MM 11236.



Fig. 7, MM 11236.

dency to a curved Cupid's bow. This is also the case of the wooden statuettes, which, in addition, have arched eyebrows, in contrast to the usual horizontal ones.²⁰

The single piece of statue attributed to Amenemhet II is, according to Evers, the focus of the statuary of the Middle Kingdom.²¹ To draw such far-reaching conclusions from this single statue, not "securely" dated, is questionable. The expression of the face is morose and seems to forebode what is to come in the later part of the dynasty. The sensory organs are still rather "hieroglyphic", but the context of the setting is plastically differentiated, i.e. the various planes of the face.

From the reign of Sesostris II, there are four preserved statues (one in a bad state).²² The face is broad, with emphasized yokebones. The eyes are wide apart and horizontally set in the frontal plane. The plastically modelled eyebrows are arched and there are no cosmetic lines, nor is the softly curved mouth contoured. There are grooves between upper eyelids and eyebrows as well as below the eyes.

The two statues of Queen Nofret are examples of more or less the same style:²³ the face that is broader than it is long, the elongated eyes situated in the frontal plane, the lack of cosmetic lines, arched eyebrows and a softly curved mouth. The expression is a serious one. In short, there are no longer any "hieroglyphic" entities, as in the earlier reigns. There is tension, and as well as the unity of the parts, the visual value is stressed. As Evers has pointed out, this is also evident in the placing of the inscriptions.²⁴

Returning to the Stockholm statuette, several features argue in favour of an origin in the reign of Sesostris II. The eyebrows, or rather the superciliary arches, are arched and there are grooves between them and the upper eyelids. The eyes are likewise horizontally set, rather wide apart and in the frontal plane. The very shape, proportions and three-dimensional relationships

Fig. 8, University College, London, UC 14813, (after Page, *Egyptian Sculpture*).



of the face have parallels.²⁵ A statue in Copenhagen, identified as Sesostris II on stylistical criteria by Evers, is also a good parallel to the Stockholm statuette.²⁶

Especially the grooves between the eyelids and superciliary arches, the absence of the cosmetic lines and the pronounced, curved Cupid's bow of the mouth make an earlier dating of the statuette discussed unlikely but make it fit into the general picture of the sculpture of Sesostris II.

According to Vandier, there are no known statues of private persons hewn out of stone before this reign.²⁷ According to Evers, they occur as early as the end of the reign of Sesostris I.²⁸ This is enlightening in relation to the confusing state of research on the private statues of the Middle Kingdom.

Thus, turning our attention to the private sculpture of the first part of the Twelfth Dynasty, we find it likewise sparsely represented by "securely" dated statues.²⁹ There is, of course, Senui, representing the "classical" type in the reign of Sesostris I,³⁰ and the upper part of Sesostris-ankh from Lisht, likewise rather horizontal and "conventional" in structure.³¹ From the reign of Sesostris II, there are the statues of Sarenput II in Assuan.³² The broad face with emphasized yoke-bones, horizontal eyes set rather wide apart in the frontal plane and grooves all below the eyes are features parallel to those of the statuette in Stockholm. The plastic fold of the cheek at the wing of the nose of Sarenput II,³³ is parallel to the treatment of this area of the sphinx of Amenemhet II,³⁴ and Sesostris II.³⁵ The expression of the Assuan statues is close to that of a statue of Sesostris I³⁶ or the above-mentioned sphinx of

Amenemhet II. However, the differentiated treatment of the orbital area (the grooves above the upper eyelids) of the Stockholm statuette is not realized on the Assuan statues. This fact, together with the parallels (earlier in time or contemporary) pointed out above, make it hard to accept the theory of Wildung, that the statuary at Assuan is avant-garde in comparison with the contemporary royal art.³⁷

A not "securely" dated head in the Petrie Collection, UC 14813, (Fig. 8)³⁸ is the best parallel I have been able to find to the Stockholm statuette. The provenance is unknown and the head is with no further precision dated to the Middle Kingdom. It should be contemporary with the statuette under discussion or slightly earlier.

Vandier points out the exaggerated size of the hands and feet of the Middle Kingdom statuary, a feature that is confirmed by the Stockholm statuette.³⁹ So is the vigorous modelling of the body, referred to by Evers.⁴⁰

Stylistically, the period of Sesostris II plays an important role.⁴¹ It represents the very point of intersection of the previous, more or less "classical", horizontally structured type and the dynamic, expressionistic style realized in the reign of Sesostris III.

The change of style goes hand in hand with the fashion of putting up statues of private persons in the temples, where they were visible to visitors but which were formerly reserved for royal persons. The statuette in Stockholm thus probably once stood in a temple, expressing devotion and taking part of the daily offering to the god.

¹ MM 11236.

² MM 11234 and MM 11235.

³ There are patches of lighter and softer material.

⁴ For this detail, see Fisher, H. G., 1975. An Elusive Shape within the Fisted Hands of Egyptian Statues. *Metropolitan Museum Journal*, Vol. 10, pp. 9–21. New York.

⁵ For the terms and points of reference used in the article, see Lindblad, I., 1984. Royal Sculpture of the Early Eighteenth Dynasty in Egypt. *Medelhavsmuseet Memoir*, Vol. 5, pp. 11–13. Stockholm.

⁶ Vandier, J., 1958. *Manuel d'archéologie égyptienne*, Tome III, 2 parts. Les grandes époques, la statuaire, pp. 61–63 and 228–229. Paris.

⁷ Vandier, J., op. cit., p. 249.

⁸ Vandier, J., op. cit., p. 251, Pls. XCIV, 2, LIX, 2 and XCI, 5–6.

⁹ Vandier, J., op. cit., pp. 228–229.

¹⁰ Evers, H. G., 1929. *Staat aus dem Stein*, 2 parts, p. 82. München.

¹¹ Müller, H. W., 1952–53. Ein Ägyptischer Königskopf des 15. Jahrhunderts v. Chr. Ein Beitrag zur Stilentwicklung der 18. Dynastie. *Münchener Jahrbuch der bildenden Kunst*, Band III–IV, p. 82. München.

¹² Wildung, D., 1984. *Sesostris und Amenemhet. Ägypten in Mittleren Reich*, p. 145. Zürich.

¹³ Vandier, J., op. cit., p. 260.

¹⁴ Vandier, J., op. cit., p. 170.

¹⁵ Evers, H. G., op. cit., Taf. 15–17, 48–50, 64–68 and 72–75.

¹⁶ Evers, H. G., op. cit., p. 41; Vandier, J., op. cit., p. 173. See also Lindblad, I., op. cit., p. 69.

¹⁷ Evers, H. G., op. cit., Taf. 31–32.

¹⁸ The identification with Sesostris I has recently been questioned by Sally B. Johnson in *Journal of American Research Center in Egypt*, Vol. XVII, 1980, pp. 11–20. Pls. I–IV. The author reattributes the statuettes to the late Twelfth Dynasty or early Thirteenth Dynasty.

¹⁹ Evers, H. G., op. cit., pp. 34–35.

²⁰ Evers, H. G., op. cit., p. 41.

²¹ Evers, H. G., op. cit., p. 46, Taf. 48–50; Wildung, D., op. cit., Fig. 172.

²² Evers, H. G., op. cit., Taf. 64–68.

²³ Evers, H. G., op. cit., Taf. 72–75.

²⁴ Evers, H. G., op. cit., p. 74.

²⁵ See note 23.

²⁶ Evers, H. G., op. cit., Taf. 69.

²⁷ Vandier, J., op. cit., p. 255.

²⁸ Evers, H. G., op. cit., p. 29.

²⁹ Vandier, J., op. cit., p. 285.

³⁰ Evers, H. G., op. cit., Taf. 24; Lindblad, I., op. cit., p. 69.

³¹ Wildung, D., op. cit., Fig. 93.

³² Wildung, D., op. cit., Figs. 123–124.

³³ Wildung, D., op. cit., Fig. 123.

³⁴ Wildung, D., op. cit., Fig. 172.

³⁵ Evers, H. G., op. cit., Taf. 66.

³⁶ Evers, H. G., op. cit., Taf. 45.

³⁷ Wildung, D., op. cit., p. 143, Fig. 124.

³⁸ Page, A., 1976. *Egyptian Sculpture, Archaic to Saite from the Petrie Collection*, Fig. 49. London.

³⁹ Vandier, J., op. cit., p. 287.

⁴⁰ Evers, H. G., op. cit., p. 39.

⁴¹ Vandier, J., op. cit., p. 285.

Szenen vom Leben in Amarna

Beate George

„Innerhalb dieser vier Stelen nun vom Ostgebirge bis zum Westgebirge befindet sich Achetaton selbst. Es gehört meinem Vater 'Re-Harachte der im Horizont jubelt in seinem Namen Schu der Aton ist', der Leben gibt ewiglich, mit Gebirgen, Wüsten, Wiesen, neuem Land, Hochland, frischem Land, Feldern, Wasser, Siedlungen, Uferland, Leuten, Vieh, Bäumen und allen anderen Dingen, die der Aton, mein Vater, sein lassen wird ewiglich. Ich werde diesen Eid nicht verletzen, den ich dem Aton, meinem Vater, geleistet habe in Ewigkeit. Sondern er soll dauern auf der Stele aus Stein an der südöstlichen Grenze und ebenso an der nordöstlichen Grenze Achetatons. Er soll auch dauern auf der Stele aus Stein an der südwestlichen Grenze und ebenso an der nordwestlichen Grenze Achetatons. Er soll nicht ausgelöscht werden, er soll nicht abgewaschen werden, er soll nicht ausgehakt werden, er soll nicht mit Stuck zudeckt werden, er soll nicht zum Verschwinden gebracht werden. Falls er verschwindet, falls er vergeht, falls die Stele, auf der er sich befindet, umfällt, so werde ich ihn wieder erneuern, von neuem an dieser Stelle, wo er ist.“

Diese hochgemute Beschreibung von der Gründung und Weihung seiner neuen Hauptstadt Amarna an Aton und von ihrem Bestehen für ewige Zeiten gibt Echnaton auf seinen späteren Grenzstelen.¹ In Wirklichkeit sollte mit seiner Stadt ganz anders verfahren werden und er selbst durch den Tod an allem weiteren Planen – von Erneuern und Wiederaufrichten ganz zu schweigen – gehindert werden. Die Steinbauten Amarnas wurden in der 19. Dynastie bis auf die Grundmauern abgetragen und andernorts, wie etwa in Hermopolis, als Baumaterial wiederverwendet.² Als Reliefs von Amarna werden jedenfalls die Kalksteinblöcke (*talatat*) angesehen, die hauptsächlich gegen Ende der deutschen Ausgrabungen 1938–39 in den Bauten

Sethos' I und Ramses' II in Hermopolis gefunden wurden sind. Aufgrund des Kunststiles und einzelner Inschriften gelten sie als Spolien von Amarna, genauer gesagt als Fragmente verschiedener Tempel dort.³ Eine Zuschreibung einzelner loser Blöcke ohne Inschriften, wie sie in vielen ägyptischen Sammlungen vorhanden sind, an ein bestimmtes Gebäude ist zur Zeit noch ein höchst unsicheres Unterfangen. Bisher sind nur sehr wenige Wände mit ihrem gesamten Reliefschmuck rekonstruiert worden, so dass im Augenblick über den Zusammenhang zwischen Funktion und Dekorprogramm eines Gebäudes nur sehr wenig Bestimmtes gesagt werden kann. Nicht nur stilistisch sondern auch thematisch nehmen die Reliefs der Amarna-Zeit eine Sonderstellung ein. Die im eigentlichen Sinne religiösen Szenen sind auf ein Hauptthema, das ikonographisch variiert werden kann, beschränkt: die Beziehung des Aton zu Echnaton und seiner Familie. Religiöse Begleithandlungen wie zum Beispiel Opferschlachtungen – ein Zug übrigens, worin sich der eher abstrakt als Sonnenscheibe erscheinende Aton *nicht* von anderen Göttern unterscheidet, ist sein Hunger und Durst – leiten über zu allen anderen Tätigkeiten der Bewohner Amarnas, die im Dienst des Gottes oder des Königshauses notwendig sind. Außerdem erscheinen Szenen religiösen Inhalts und solche eher „profanen“ Charakters nicht nur in den Gebäuden der Stadt, sondern auch in den Felsgräbern von Amarna. Allerdings sind in den Gräbern die Szenen „profanen“ Typs von spezieller Art verglichen etwa mit den thebanischen Privatgräbern der 18. Dynastie. In Amarna haben sie hauptsächlich offiziellen Inhalt und zeigen den Grabinhaber in seiner Beziehung zum Königshaus, wie zum Beispiel bei der Entgegennahme von Auszeichnungen in Gestalt von goldenen Halskragen aus der Hand des Königs am Erscheinungsfenster. Ähnlich scheint es sich mit



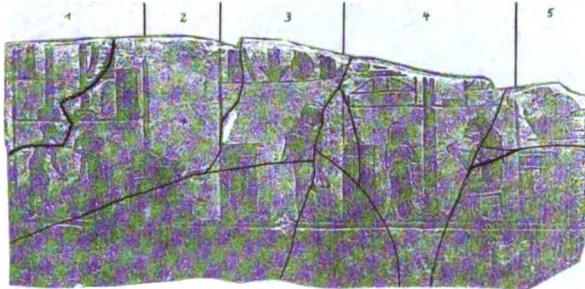
MME 1983:2.

den *talatat* zu verhalten: Darstellungen aus dem Alltagsleben verschiedener Berufsgruppen kommen vor, wenn sie ihre Tätigkeit in einem Tempel oder Palast ausüben und somit ebenfalls in die göttlich-königliche Sphäre einbezogen sind, wie ja alles Leben auf Erden von Aton stammt, der sich König Echnaton als einzigen Mittler erwählt hat. Eine scharfe Trennungsline zwischen religiös und profan ist dabei kaum zu ziehen: „Erhabener Gott, der sich selbst erschaffen hat, der jedes Land gemacht hat, der geschaffen hat, was darin ist, alle Völker, Vieh und Herden, alle Bäume, die aus dem Boden wachsen. Sie leben, wenn du für sie aufgehst. Du bist Vater und Mutter von allem, was du geschaffen hast“, so ist das Verhältnis Gottes zu seinen Geschöpfen im kleinen Aton-Hymnus ausgedrückt.⁴

In dieser Lage liefern die Gräber in Amarna zur Zeit das sicherste Vergleichsmaterial, um einzelne Blöcke aus Hermopolis mit ihren oft fragmentarischen Darstellungen deuten und versuchsweise in einen grösseren thematischen Zusammenhang einzufügen zu können. Denn nur in den Gräbern sind ganze Reliefzyklen vollständig erhalten. Was das Vergleichsmaterial aus den Gräbern allerdings nicht erlaubt, ist, im Einzelfall die Zugehörigkeit unbeschrifteter *talatat* zu bestimmten Gebäuden in Amarna zu beweisen. Hier helfen auch

die auf den *talatat* wiedergegebenen architektonischen Details nicht viel weiter: sie können in vielen Fällen nicht mit durch Ausgrabungen freigelegten Gebäuderesten identifiziert werden. Dasselbe Problem besteht übrigens auch für die in den Gräbern vollständig abgebildeten Bauwerke: Wiedergaben von Interieurs, die etwa als „königlicher Harem“ oder „Palastmagazin“ gedeutet worden sind, weichen von den archäologischen Resten dieser Bauten – soweit man diese nun hat identifizieren können – oft beträchtlich ab. Wir haben keine naturgetreuen Architekturzeichnungen vor uns. Noch schwieriger gestaltet sich da natürlich die Bestimmung fragmentarischer Reliefs. Im folgenden soll ein solcher Block aus Hermopolis, der sich im Medelhavsmuseet befindet, im Detail vorgestellt werden. Um seine Darstellungen besser zu verstehen, werden vor allem Grabbilder und archäologische Einzelfunde aus Amarna zum Vergleich herangezogen werden.

Das Relief MME 1983:2 ist eine unregelmässig rechteckige Platte aus hellem dichtem Kalkstein. Die grösste Länge beträgt 52 cm (fast eine Königselle), die grösste erhaltene Höhe 23 cm und die Dicke circa 3,7 cm. Die Rückseite weist moderne Sägespuren auf. Der Stein war in acht Stücke zerbrochen und ist modern zusammengeklebt. Eine Bruchlinie beginnt an der linken un-



Sektion 1-5 mit den Schäden; die 2 Wellenlinien geben nicht Brüche, sondern Oberflächenbeschädigungen an.

teren Ecke des Reliefs ausserhalb des Bildfeldes, sie geht schräg durch den rechten Fuss und den linken Knöchel der zweiten stehenden Figur in Sektion 1, weiter schräg aufwärts durch die Tür und die Konstruktion in Sektion 2. Die Linie, die waagerecht die Schulterpartie des ersten stehenden Mannes in Sektion 1 überschneidet und im Zickzack nach oben bis zur Kante des Steines verläuft, ist eine Beschädigung nur an der Oberfläche. Die Bruchlinie teilt sich und verläuft in Sektion 3 teils nach oben vorbei an der rechten Seite des ersten Gefässes und teils waagerecht in Taillenhöhe durch die Gestalt mit der Amphora: unter der Spitze der Amphora entlang, durch die Finger der rechten Hand, unter dem Nabel weiter bis zum linken Arm. Diese Figur ist die am meisten restaurierte, denn ein anderer Bruch geht hier durch das ganze Relief, von oben, links vom ersten Tisch, an der Vorderseite der Figur entlang und schräg durch ihre Beine zur unteren Kante des Steines. Ausserdem verläuft ein weiterer Bruch von der linken Armbeuge aus durch die nächste Tür in Sektion 4 schräg zur unteren Kante des Reliefs. Dazu kommt noch ein Bruch von der Mitte dieser Tür senkrecht nach oben bis zum Ende der Linie mit den Gefässen in Sektion 3. In Sektion 4 geht im Teil rechts von der Säule ein Bruch von rechts oben nach links unten durch Perücke, rechte Schulter, Kniepartie und Zehen des rechten Fusses der sitzenden Frau. Dieser Bruch verläuft nach oben und unten weiter durch das ganze Relief. Vom Hals der Sitzenden durch den unteren Abschluss der Perücke geht noch eine Bruchlinie in waagerechter Richtung nach rechts durch Sektion 5 oberhalb von der Tür bis zur Kante des Reliefs. Ein letzter Bruch schräg durch den linken Arm der Sitzenden liegt nur in der Oberfläche. In Sektion 5 ist die Bildoberfläche an der oberen Kante bis zu 3 cm abgeschlagen. Nach rechts hin ist dieser Raum nicht voll-

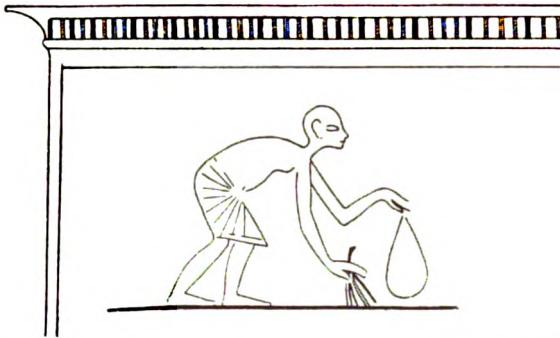
ständig erhalten. Nach der Normierung der Amarna-Blöcke auf eine Elle fehlt allerdings an der Länge nur sehr wenig, an der Höhe aber etwa 4 cm. Die Reliefs sind in versenkter Technik in den weissen feinen Kalkstein hineingeschnitten. Bei den Farben dominiert rotbraun bei den Figuren, Architekturelementen und der Einrichtung. Die Perücke der sitzenden Frau ist schwarz, die der beiden stehenden Gestalten in Sektion 3 und 4 grau-weisslich, möglicherweise ein verblichenes schwarz. Überhaupt ist es fraglich, ob die Farben ursprünglich oder eine moderne Verbesserung sind.

Der Stockholmer Block ist schon in Roeders grossem Werk „Amarna-Reliefs aus Hermopolis“ als Nummer PC 138 abgebildet und behandelt worden.⁵ Die Beschreibungen dort sind aber aufgrund der unzureichenden Photographie so fehlerhaft und widersprüchlich, dass hier nur ausnahmsweise auf sie eingegangen werden soll. Unser Block gehört nicht zu den von Roeder ausgegrabenen, sondern war zusammen mit 315 weiteren nur photographisch zugänglich. Das Relief mit seinem Reichtum an Architektur- und Einrichtungsdetails und an Personen bei verschiedenen Tätigkeiten soll vielmehr Szene für Szene neu vorgeführt werden. Trotz der Unsicherheit bei der Zuschreibung an ein bestimmtes Gebäude in Amarna gibt es doch interessante Einblicke in das Leben der Einwohner während der kurzen Blütezeit dieser Stadt.

Auf einer durchgehenden horizontalen Linie sind die Interieurs von fünf Räumlichkeiten neben einander aufgereiht. Alle diese fünf Sektionen sind zum oberen Abschluss hin beschädigt, der Raum ganz rechts ausserdem an seiner äusseren Seite. Der erste Raumkomplex links ist im unteren Register intakt. Ob und was für Lokalitäten sich möglicherweise noch weiter nach links hin angeschlossen haben, ist nicht mehr zu sagen. Dieser erste Komplex besteht aus zwei Zimmern hintereinander. Das vordere (unteres Register) hat eine Tür mit Hohlkehle rechts unten an der Ecke des Raumes. Zwei Gestalten halten sich hier auf. Die linke, nach rechts gewandte stellt einen nur mit einem Schurz bekleideten Mann dar. Das Gesicht ist leider sehr diffus. Auge und Profillinie sind nur noch ganz schwach erkennlich. Er trägt keine Perücke. Eine Beschädigung verläuft durch die Schulterpartie, die frontal wiedergegeben ist. Der Oberkörper ist leicht vorgeneigt. Die rechte Hand ist in Schulterhöhe gegen die zweite Person hin ausgestreckt, mit der der Mann offensichtlich in einem Gespräch begriffen ist. In der herabhängenden

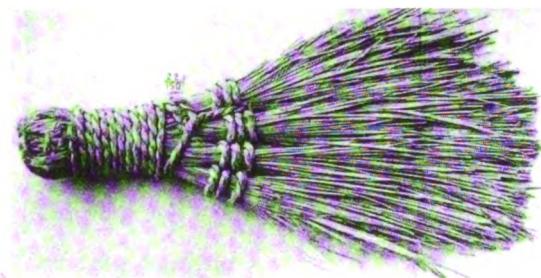
Rechts: MME 1983:2, Sektion 1.





Fegender im Tempel, Grab Merires I: Rock Tombs I, pl. XI.

linken Hand hält er einen Besen mit kurzem Stiel, dessen Borsten in vier Büschel geteilt sind. Wie ein solcher Besen angewandt wurde, ist in Merires I Grab in Amarna dargestellt:⁶ im rückwärtigen Teil des Aton-tempels ist ein ähnlich gekleideter Mann bei der Reinigung eines Raumes dargestellt. In gebückter Haltung fegt er den Boden mit einem kurzstieligen Besen in der rechten Hand, während er in der linken einen Sack oder Korb für die Abfälle hält. Ein entsprechender Besen mit viergeteilten Borsten ist auch in einem Haus



Besen aus Amarna: City I, pl. XXI.

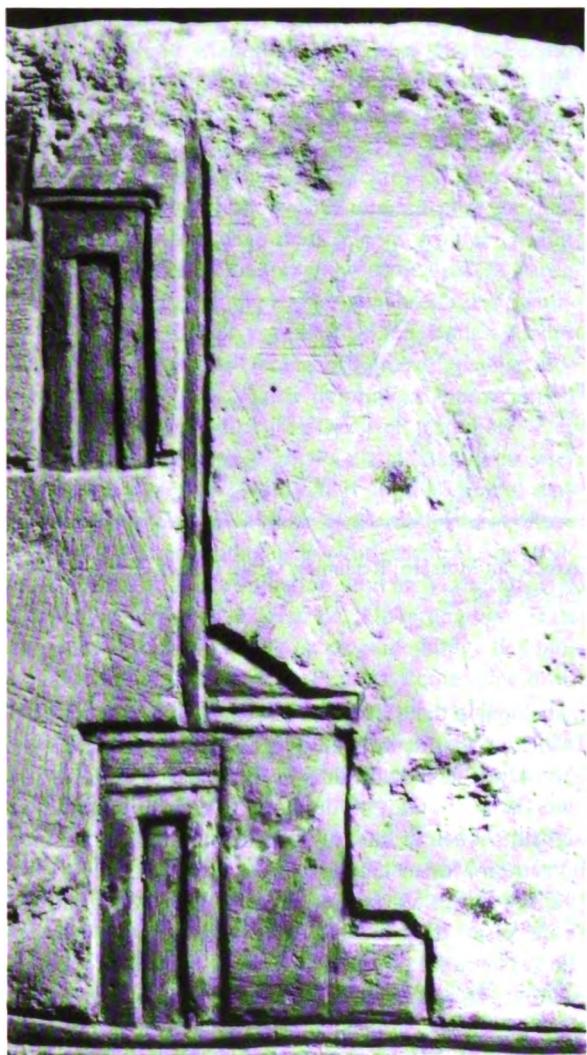
des „Eastern Village“ in Amarna gefunden und von den Ausgräbern als „floor broom“ identifiziert worden.⁷ Sehr schön und sorgfältig ist der knielange Schurz des Mannes wiedergegeben. Der gefältelte Stoff reicht im Rücken hoch hinauf und hat ein großes dreieckiges plissiertes Vorderstück. Der linke Unterschenkel und der rechte Fuß des Mannes sind beschädigt, doch ist es deutlich, dass er keine Sandalen getragen hat.

Diesem mit der Bodenreinigung betrauten Diener ist rechts eine fast gänzlich unbekleidete kleinere Gestalt zugewandt. Sie ist am linken Unterschenkel etwas beschädigt, sonst aber wohl erhalten. Ein breites Band

über den Hüften ist der einzige Schmuck. Der Nabel ist oberhalb davon als kleiner dunkler Punkt angedeutet. Nacktheit kommt vor allem bei sozial niedrig stehenden und jugendlichen Personen vor, welches beides hier zutreffen dürfte. Denn es handelt sich auch hier um einen Angehörigen des Dienerstandes, ob um einen Jungen oder ein Mädchen, ist nicht mit Sicherheit zu entscheiden. Von der Frisur ist nichts zu erkennen, da die Figur ein großes rundbauchiges Gefäß mit der linken Hand auf der linken Schulter festhält. Eine kurze schräge Linie unterhalb des Gefäßes gehört nicht zu einer Perücke, sondern sieht am Original wie ein technischer Fehler, ein Ausrutschen des Meissels, aus. Das stark bauchige Gefäß mit rundem Boden und ziemlich engem, halbhoherem zylindrischem Hals ist aus Amarna wohlbekannt. Die Reliefdarstellungen der Felsgräber liefern auch hier das beste Anschauungsmaterial: in Vorratsräumen von Tempeln und Palastanlagen, auch in den Lokalitäten beim königlichen Erscheinungsfenster findet man oft schnurgerade aufgestellt Reihen von Gefäßen dieses Typs auf Ständern.⁸ Erhaltene Exemplare aus Amarna dagegen haben oft einen länglicheren Gefäßkörper oder einen breiteren, kürzeren Hals.⁹ Zusammenfassend lässt sich von dieser Szene sagen, dass zwei Personen, eine mit einem Besen, eine andere mit einem Vorratsgefäß, in einem unmöblierten Raum in einer Unterhaltung begriffen sind. Beide gehören dem dienenden Stande an. Ihre Tätigkeiten sind sowohl im Tempel- als auch im Palastbereich möglich, und auch das Vergleichsmaterial aus den Gräbern erlaubt keine eindeutige Zuschreibung.

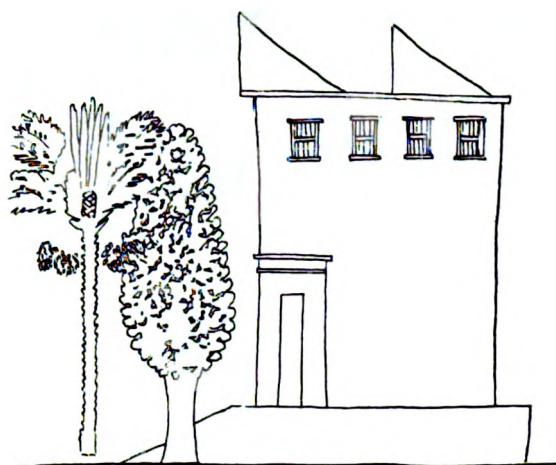
Von dem Raum, in dem sich diese beiden Leute befinden, führt eine Tür in einen weiteren dahinter liegenden (oberes Register), der nur fragmentarisch erhalten ist. Zwei Säulenbasen und ein Teil ihrer Schäfte sind noch vorhanden. In den Architekturbildern der Gräber kommen sowohl Palmbaumblatt – als auch Papyruskapitelle vor.¹⁰ An der linken Seite befindet sich eine weitere Tür, deren Sturz heute fehlt. Die Lage dieser Tür deutet darauf hin, dass sich weitere Lokalitäten nach links angeschlossen haben, ob Zimmer, ein Korridor oder eine Straße muss offen bleiben. In der Höhe dieser Tür sind auf einer Standlinie nur noch die nackten Füße und Unterschenkel einer dritten nach links gewandten Person erhalten. Eine Beschädigung der Reliefoberfläche verläuft im Zickzack durch dieses Gemach und über das linke Bein.

An diese beiden hinter einander liegenden Räume schließt sich nach rechts hin als zweite Sektion ein schmaler Korridor an. An seiner linken unteren Ecke



MME 1983:2, Sektion 2.

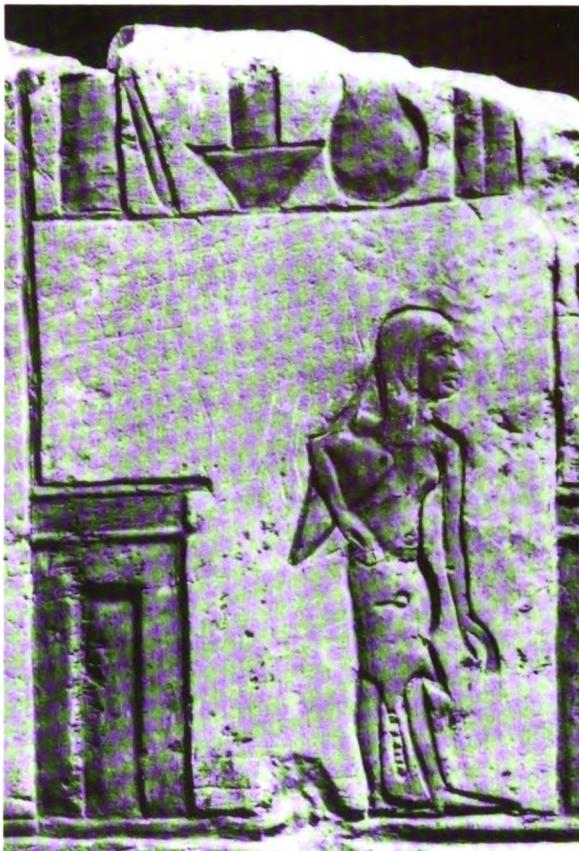
befindet sich eine Konstruktion, deren Funktion nicht klar ist: sie erinnert teilweise an einen Thron, aber dazu passen die Hohlkehle an der oberen Kante und der dreieckige Aufbau darauf nicht. Für einen Altar ist das ganze sehr hoch, und statt der einen hohen Stufe mit kissenartiger Auflage würde man eher eine flache Treppe erwarten. Der dreieckige Aufbau zuoberst erinnert etwas an die Ventilationsanlagen auf Gebäuden, wie sie zum Beispiel auf einem Papyrus des Nacht schematisch wiedergegeben sind.¹¹ Doch fehlen auf unserem Relief alle weiteren Details wie Türen und Fenster, die auf ein Gebäude deuten könnten, und die hohe Stufe, die direkt mit dem Rest des Gebildes zusammenhängt und



Ventilatoren auf einem Pavillon, Papyrus des Nacht: Badawy, History of Egyptian Architecture (NK), fig. 9.

keinen separaten Sockel bildet, bleibt auch in diesem Fall unerklärt. Dass es sich bei dieser Konstruktion aber doch eher um einen Gebäudeteil als ein Möbel handeln könnte, darauf könnte die Lage der Tür im ersten Raum links deuten, die ja nicht direkt auf den Korridor mündet, sondern in diese besagte Konstruktion zu führen scheint.

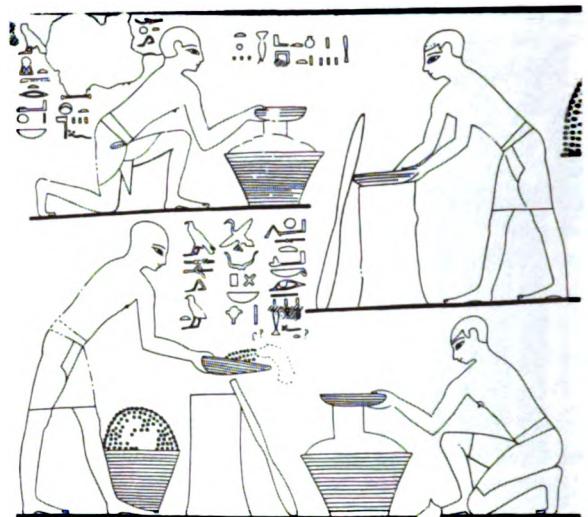
Die drei rechts folgenden Räume (Sektion 3–5) sind alle durch Türen mit Hohlkehlen mit einander verbunden, die sich in jedem Zimmer in der linken unteren Ecke befinden. In Sektion 3 stehen auf einer Linie vier verschiedene Gefäße. Bei allen ist die obere Abschlusslinie beschädigt, doch ist diese in allen Fällen am Original noch teilweise zu erkennen, so dass also die Behälter in ihrer ursprünglichen Höhe erhalten sind. Das erste Gefäß links mit dem angelehnten Stab ist ein Mörser mit Stössel. Aus Amarna ist mir nur eine fragmentarische Darstellung auf einem *talatat* bekannt, in der eine Frau mit einem sehr plumpen Stössel in einem Mörser arbeitet, von dem gerade noch die obere Kante vorhanden ist.¹² Jedoch sind Mörser sonst aus Grabbildern seit dem Alten Reich und auch in Modellen aus dem Mittleren Reich wohlbekannt.¹³ Sie werden zum Zerstossen von Körnern zu Mehl, zum Zerkleinern von gekeimtem Getreide bei der Bierherstellung und zum Zerquetschen von Datteln zu Dattelwein oder als Kuchenfüllung benutzt. Eine sehr schöne Darstellung findet sich im Grabe des Rechmire in Theben,¹⁴ in der *wkh* – Körner zu Mehl und Datteln als Kuchenfüllung zerstossen werden. Die kleinen Unregelmäßigkeiten in den Außenwänden der Mörser dort lassen klar erkennen



MME 1983:2, Sektion 3.

nen, dass sie aus Abschnitten eines Baumstamms hergestellt sind. Auch der Stössel war sicher aus Holz. Von unserem Mörser lässt sich nicht mit Sicherheit sagen, ob er zum Bier- oder Dattelweinbrauen oder zum Brotbacken verwendet werden sollte. Bier und Brot werden gewöhnlich in demselben Raum hergestellt, wie die Grabbilder zeigen, und beide werden ja aus Getreide gemacht.

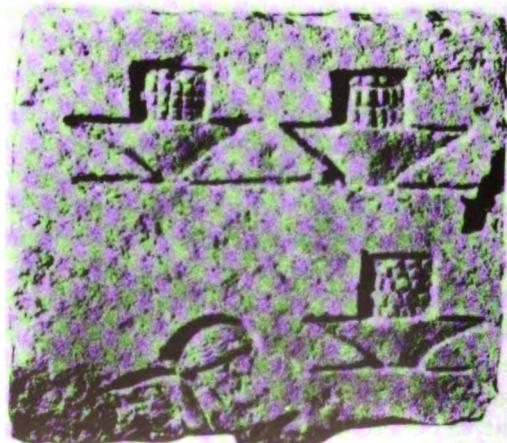
Neben dem Mörser steht eine flache Schale mit weiter Öffnung, in der sich eine zylinderförmige Masse befindet. Ein anderes Amarna-Relief weist drei ähnliche Schalen auf, bei denen der Inhalt schachbrettartig gemustert ist.¹⁵ Es dürfte sich in allen vier Fällen um die schematische Wiedergabe sorgfältig aufgeschichteter und zusammengepresster Früchte handeln, etwa um Feigen oder Datteln. Diese Schale und das folgende bauchige Gefäß mit rundem Boden und weitem Hals waren sicher aus Ton gemacht. Dieser dritte Behälter ist ein Gebrauchsgefäß für Flüssigkeiten, wie es



Arbeit mit Mörsern, Rechmires Grab: Davies, Tomb of Rekhmi-re, I, pl. L.

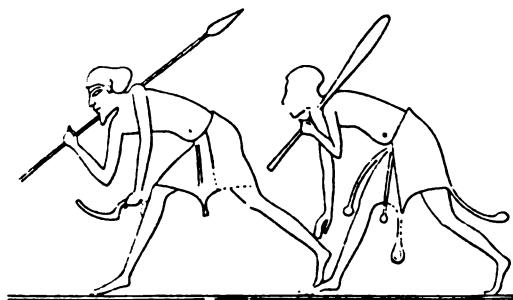
manchmal in den Gräbern von Amarna abgebildet ist.¹⁶ Das letzte Gefäß auf dem Regal ist wieder zylindrisch. Zum Unterschied von dem ersten weist es in der Mitte eine Längsrille auf, so dass es wie ein Doppelzylinder aussieht. Auch in diesem Falle dürfte es sich um einen hölzernen Mörser handeln.

Ein weiteres Vorratsgefäß, eine grosse Spitzamphora für Wein, trägt die in diesem dritten Raum befindliche Person unter dem rechten Arm. Nur ein Henkel ist sichtbar. Derartige Amphoren sind in Amarna gefun-



Fruchtschalen auf *talatat*: Roeder, Amarna-Reliefs, Taf. 30.

den worden und auch auf Grabreliefs dort abgebildet, die Vorratsräume wiedergeben.¹⁷ Diese vierte Person ist die am stärksten restaurierte. Der helle, erhöht stehengelassene Hintergrund ist an der Vorderseite der Figur modern mit Gips repariert, und zwar vom Scheitel ausgehend am Profil des Gesichtes entlang, unter dem Kinn, zwischen linkem Arm und Körper, vor dem linken Bein und zwischen den Beinen. An der Gestalt scheinen ein Teil der linken Schulter, die äussere Partie der linken Brustseite, die linke Aussenseite des Schurzes mit seinem Zipfel vor dem linken Bein und der Schwanz zwischen den Beinen zumindest teilweise modern ergänzt zu sein. Auch der linke Unterschenkel und die Ferse des linken Fusses sind repariert. Der Nabel ist oberhalb des Schurzes als kleiner Kreis wiedergegeben. Der linke Arm hängt von der frontal dargestellten Achselpartie gerade herab mit leicht geöffneter Hand. Der rechte dagegen ist ungeschickt angewinkelt, um die Amphora zu halten, und im Verhältnis viel zu kurz proportioniert. Auch der Übergang vom Hals zur rechten Schulter ist wenig elegant: hinter der langen, gerade herabhängenden Perücke deutet eine dreieckige braune Fläche auf einen ganz übertrieben dicken Hals. Die Perücke ist ohne Details wiedergegeben und von grau-weisslicher Farbe, möglicherweise ein verblichener Rest von schwarz oder moderne Übermalung. Das Auge ist schmal, der Mund ziemlich wulstig. Aufgrund der starken Restaurierungen ist es unsicher, ob diese Figur einen Mann oder eine Frau darstellen soll. Auch die Art des Kleidungsstückes ist nicht sicher festzustellen. Im heutigen Zustand sieht es so aus, als wenn der Schurz aus einem Tierfell bestünde. Unerklärlich ist der eingeritzte Kreis mit waagerechtem Strich mitten auf dem Schurz. Ein Tierfell könnte auf ausländische Herkunft dieser Person deuten. So tragen etwa Angehörige von Negerstämmen im Grabe des Merire II Schurze mit echten oder imitierten Tierschwänzen.¹⁸ Ob die wulstigen Lippen unserer Figur vielleicht auf eine südliche Herkunft deuten sollen, ist immerhin denkbar. Dazu passt allerdings nicht recht die lange ägyptische Perücke. Einen ähnlichen Schurz wie die Neger bei Merire II können auch Ausländer semitischer Abstammung tragen, die durch halblanges Haar und spitzen Bart deutlich charakterisiert sind. Sie sind als Angehörige der Militäreskorte des Königspaares in Merires I und Ahmes' Gräbern abgebildet.¹⁹ Bei Ahmes ist neben einem derartigen Semiten ein Neger mit richtigem Tierfell dargestellt, an dem Beine und Schwanz naturgetreu wiedergegeben sind. Hier wird der Unterschied zwischen der Stoffimitation des Semi-



Neger und Semiten mit Fellschurz bzw. Stoffimitation, Ahmes' Grab: Rock Tombs III, pl. XXXI.

ten und dem echten Fell des Negers augenfällig. Trotz dieses Vergleichsmateriales muss die Bestimmung unserer Person offen bleiben, da die Restaurierung eine eindeutige Entscheidung, ob es sich um einen Mann oder eine Frau ägyptischer oder ausländischer Herkunft handelt, nicht mit Sicherheit zulässt. Sicher ist dagegen, dass wir es auch hier mit einer Person dienender Funktion zu tun haben, die in den Wirtschafts- und Vorratsräumen beschäftigt ist. Deren Zuordnung zu einem Gebäudekomplex ist dagegen offen.

Das nächste Zimmer rechts (Sektion 4) hat wiederum eine Tür mit Hohlkehle an der linken unteren Ecke. Das Bildfeld wird von einer Säule mit Basisplatte, deren Kapitell nicht erhalten ist, in zwei fast gleiche Abschnitte geteilt. Im oberen Teil ist rechts und links von der Säule je ein Speisetisch auf einer Standlinie abgebildet; beide, besonders der rechte, sind beschädigt. Die runde Form ganz links auf dem linken Tisch deutet noch ein Brot an. Der rechteckige Gegenstand vor dem rechten Tisch ist wohl ein Ziegel, wie er gelegentlich als Sitzgelegenheit benutzt wird.²⁰ Leichte Tische dieses Typs mit einem Lattenuntergestell als Stütze der Platte sind in den Gräbern von Amarna sehr häufig dargestellt.²¹ Auf ihnen sind Speisen oder Getränke aufgestellt, und sie können so vollbeladen von einem oder zwei Dienern herbeigetragen werden.²² Bei den Ausgrabungen in Amarna scheint kein erhaltenes Exemplar gefunden worden zu sein. Ähnliche Beispiele, manchmal aus Rohr, manchmal aus Holz, sind aber sonst aus der 18. Dynastie bewahrt.²³

Auch der Hocker, auf dem die eine der beiden Frauen in diesem Raum sitzt, ist ein wohlbekanntes Möbelstück. Die Beine sind rund und sehen wie gedrechselt aus. Aus Amarna ist nur ein einziges Bein



MME 1983:2, Sektion 4.

dieser Art in den Grabungspublikationen abgebildet, das aus Elfenbein besteht und mit grüner Farbe verziert ist.²⁴ Im British Museum ist ein vollständiger Hocker aus Holz mit derartigen Beinen erhalten, der übrigens dieselben Streben wie die Speisetische auf unserem Relief aufweist.²⁵ Ein Hocker einfacheren Typs, der genau unserem entspricht, aber mit etwas anders ge-

formten Beinen befindet sich im Metropolitan Museum of Art.²⁶ Dieser Typ des „round legged stool“ ist neu in der 18. Dynastie und charakteristisch für sie. Der konvexe Sitz besteht aus Leder.

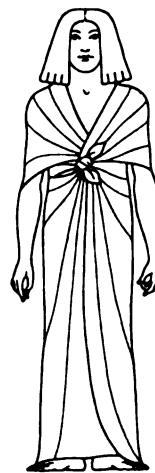
Beide Frauen in diesem Zimmer – die stehende in der linken Hälfte und die sitzende in der rechten – sind gleich gekleidet, nämlich in ein langes transparentes



Diener mit Tischen, Grab Merires II: Rock Tombs II, pl. XXXVI.

Kleid, das von den Knien abwärts weiter wird und bis auf den Boden über die nackten Füsse fällt. Nur an der Bein- und Fusspartie beider Figuren ist überhaupt zu erkennen, dass sie bekleidet sind, an Oberkörper und Armen ist keinerlei Stoff sichtbar. Es muss offen bleiben, ob vielleicht ursprünglich durch Bemalung mehr von den Gewändern angedeutet war. Auch von eventueller Plissierung ist nichts zu sehen. Nach dem Saum der Kleider zu schliessen dürfte es sich um das Sari-artige Frauengewand handeln, das seit der 18. Dynastie vorkommt: ein rechteckiges Leinenstück von mindestens 200 cm Länge und 100 cm Breite wird zuerst um die Taille geschlungen und dann um die Schultern dra-

Hocker Metropolitan Museum 14.10.4: Killen, Furniture, pl. 84.



Skizze des Frauenkleides: Bonnet, Tracht, Taf. IX, Fig. 47.

pier und unter den Brüsten geknotet. Dazu kann noch ein Gürtel mit langen losen Enden getragen werden.²⁷ Ein solches Gewand aus plissiertem dünnem Stoff trägt Nefertiti etwa bei einer Familienszene auf einer Stele in Berlin und in einer Opferdarstellung im Grabe des Eje in Amarna.²⁸ Auch Anchesenamun ist auf einer Elfenbeinschnitzerei vom Deckel eines Kastens aus Tutanchamuns Grab so gekleidet.²⁹ In allen diesen Fällen überschneidet die Fältelung den Körper von der Taille abwärts nicht, so dass – ähnlich wie auf unserem Relief – der Eindruck von Nacktheit hervorgerufen wird. Das stehende Mädchen trägt eine schulterlange, grau-weiss bemalte Perücke ganz ohne Details, während die sitzende Frau eine schwarze lange Perücke aufgesetzt hat, die in fünf dicke Strähnen gegliedert ist und als unteren Abschluss eine Reihe kleiner Zöpfchen aufweist. Ihr Gesicht ist stark beschädigt, nur Kinn und Wange sind noch erhalten.

Problematisch ist, was beide Gestalten in den Händen halten bzw. womit sie beschäftigt sind und daraus folgend, was ihre Funktion im Gesamtzusammenhang sein könnte. Roeder lokalisiert diese Szene in den Harem des Königs und sieht in der Stehenden möglicherweise eine Tänzerin und in der Sitzenden eine Lautenspielerin.³⁰ Diese Deutung lässt sich nicht halten. Wenn man die sitzende Frau genau im Original betrachtet, so ist es völlig klar, dass sie in der nach oben geöffneten linken Hand einen Tuchstreifen hält, der mit dem Daumen in der Handfläche festgehalten wird, während die Finger gespreizt sind. Dieser Tuchstreifen hängt nicht mit dem Gewand – als Gürtel oder Stoffzipfel – zusam-

men, sondern er ist ein separates Stoffstück. Sein breiter wiedergegebenes Ende überschneidet den Leib der Frau, das andere schmalere hängt auf dem Hintergrund des Reliefs herab. Dieses Tuch hängt auch nicht mit dem stabähnlichen Gegenstand zusammen, den die Sitzende in der rechten Hand hält und in dem Roeder offensichtlich einen Lautenhals gesehen hat. Doch hört dieser Stab an der Schulter auf, und von dem Klangkörper einer Laute ist vor dem Oberkörper der Frau nicht die geringste Spur vorhanden. Da um diese Zone herum drei Bruchlinien verlaufen, ist eine Reparatur der Oberfläche nicht völlig auszuschliessen. Diese muss jedoch vor Roeders Beschreibung dieses Reliefs ausgeführt worden sein. Bei Darstellungen von Lautenspielern überschneidet das Instrument immer den Oberkörper. Eine Fortsetzung des Halses zumindest wäre über der rechten Schulter zu erwarten, falls man nun nicht annehmen will, dass die Teile des Instrumentes, die den Körper überschneiden müssten, ursprünglich nur gemalt waren. Dass die sitzende Frau als Linkshänderin dargestellt wäre, kommt auch sonst gelegentlich vor und geschieht wohl nur aus Gründen ikonographischer Klarheit.³¹ Doch ist es keineswegs ungewöhnlich, eine nach links gewandte Musikantin rechtshändig spielend abzubilden.³¹ Doch abgesehen davon dass kein Klangkörper vorhanden ist, passt auch die Haltung der rechten Hand unserer sitzenden Frau nicht zum Musizieren: sie hält die Handfläche *gegen* den Stab, während Lautenspieler die Finger *um* den Hals ihres Instrumentes zu legen pflegen. Weiterhin fehlen das Plektrum und das Band, womit es gewöhnlich befestigt ist.

Die stehende weibliche Gestalt links von der Säule hält einen ähnlichen Stoffstreifen wie die Sitzende in der rechten Hand. Mit einem Ende überschneidet er den Unterleib, mit dem anderen hängt er vor dem Hintergrund herab. Mit ähnlichen Tüchern in der Hand, doch in der Mitte zusammengefaltet, sind verschiedene Gruppen von Personen in Amarna dargestellt, zum Beispiel Würdenträger mit Wedeln im Gefolge der Königsfamilie,³³ ein Diener vor dem essenden König,³⁴ ein anderer mit einem Räucherarm im Tempel³⁵ und auch die Prinzessinnen.³⁶ Die ikonographisch nächste Parallele stammt aber aus dem thebanischen Grab des Neferhotep, wo der Aufseher der Schreiber in den Tempelmagazinen sitzend mit einem ähnlichen fransengeschmückten Tuch in der linken Hand wiedergegeben ist.³⁷ Allerdings hält er den Handrücken nach oben gewendet, während sowohl die Sitzende als auch die Stehende auf unserem Relief die Handfläche nach oben kehrt.



Aufseher der Schreiber, Neferhoteps Grab: Davies, Tomb of Nefer-hotep, I, pl. XLV.

Ein weiteres Identifizierungsproblem bildet schliesslich der Gegenstand, den das stehende Mädchen unter den rechten Ellenbogen geklemmt hat und mit der geballten linken Hand festhält. Roeder erwähnt dies Objekt überhaupt nicht, obwohl es auf seinem Photo sichtbar ist. Es handelt sich um vier parallele, schwach und etwas unsicher eingeritzte Linien, die unten links auf dem Hintergrund beginnen, unter dem angewinkelten rechten Arm hindurch und über die Brust verlaufen, wo sie aus der linken Hand als nur drei etwas nach oben verschobene Linien wieder zum Vorschein kommen und über die linke Schulter noch ein Stück in den Hintergrund hinausragen. Für diese eingeritzten Linien lassen sich drei Deutungsvorschläge machen, die aber alle hypothetisch sind. Diese parallelen Striche erinnern einmal an die Saiten eines Musikinstrumentes, von dem allerdings sonst nichts vorhanden ist. Am ehesten könnte man an eine kleine tragbare Winkelharfe denken, die in verschiedenen Varianten mit vertikalem oder horizontalem Schallkörper vorkommt. Schallkörper und Saitenhalter könnten dann eventuell ursprünglich allein durch Farbe wiedergegeben worden sein.³⁸ Eine in ähnlicher Weise unter dem Arm getragene Harfe scheint auf einem anderen *talatat* abgebildet zu



Musikantinnen auf *talatat* 470 VII: Roeder, Amarna-Reliefs, Taf. 71.

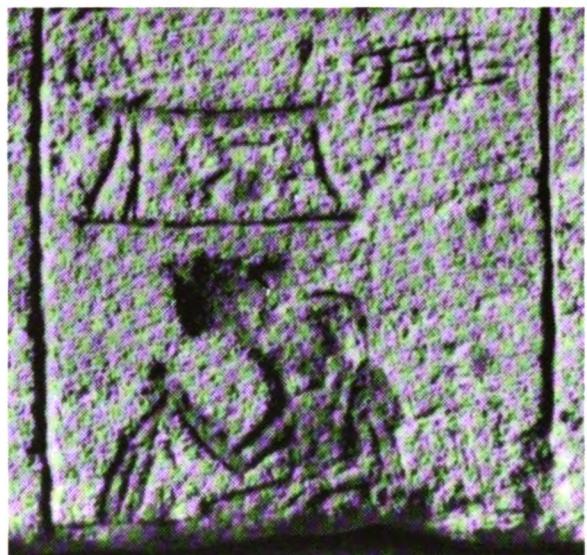
sein.³⁹ Ansonsten sind Winkelharfen mit vertikalem Schallkörper noch einigemale in den Gräbern in Amarna dargestellt, wo sie, gegen eine Schulter gelehnt, von Musikantinnen gespielt werden.⁴⁰

Ein anderer auch unsicherer Deutungsvorschlag knüpft an Szenen an, die alle aus Gräbern des Mittleren Reichs stammen. Es handelt sich um ein Arbeitsmoment beim Spinnen von Flachs, und zwar um das Kämmen der langen Fasern (*sšn*). In dieser Szene pflegt eine sitzende Frau ein Bündel von Stengeln in den Händen zu halten. Dieses Bündel ist genau so wie der Gegenstand des stehenden Mädchens wiedergegeben: als eine Anzahl dünner gerader paralleler Linien.⁴¹ Nun deutet allerdings auf unserem Relief weiter gar nichts auf eine Spinnerei hin. Deshalb kann nicht mit Sicherheit bestimmt werden, dass das Mädchen ein Bündel Flachs unter dem Arme trägt.



Frau mit Flachsstengeln, Grab 2: Newberry, El Bersch I, pl. XXVI.

Als dritte Vergleichsmöglichkeit sei schliesslich noch eine Szene auf einem anderen Amarna-Relief herangezogen. Es handelt sich um die schon einmal erwähnte fragmentarische Darstellung von Mehl- und Brotbereitung. In demselben Raum, in dem eine Frau in einem Mörser anscheinend Körner zu Mehl zerkleinert, befindet sich oben rechts in der Ecke ein Gegenstand, der aus vier flüchtig eingeritzten waagerechten parallelen Linien besteht, die gitterartig an drei Stellen von kurzen senkrechten Strichen überschnitten werden. Vielleicht handelt es sich um ein Sieb.⁴² Wenn auch auf unserem Relief keine senkrechten Linien vorhanden sind – möglicherweise aus Gründen ikonographischer Klarheit – so könnte doch ein Sieb mit den Mörsern im vorhergehenden Zimmer in Verbindung gebracht werden.



Sieb (?) rechts oben auf einem *talatat*: Cooney, Amarna-Reliefs, no. 47.

Zusammenfassend lässt sich nur konstatieren, dass die Gegenstände in den Händen der beiden Frauen – abgesehen von den Tüchern – nicht sicher identifiziert werden können. Daher ist auch die Funktion beider Personen unklar. Aufgrund der Kleidung⁴³ und der Tuchstreifen in ihren Händen, auch aufgrund der Tatsache, dass eine von ihnen auf einem Hocker sitzt, ist wohl eine übergeordnete Funktion, vielleicht als Aufseherinnen von Wirtschafts- und Vorratsräumen, anzunehmen. Es kann nicht ausgeschlossen werden, dass jedenfalls das stehende Mädchen möglicherweise stattdessen mit Musik beschäftigt ist.



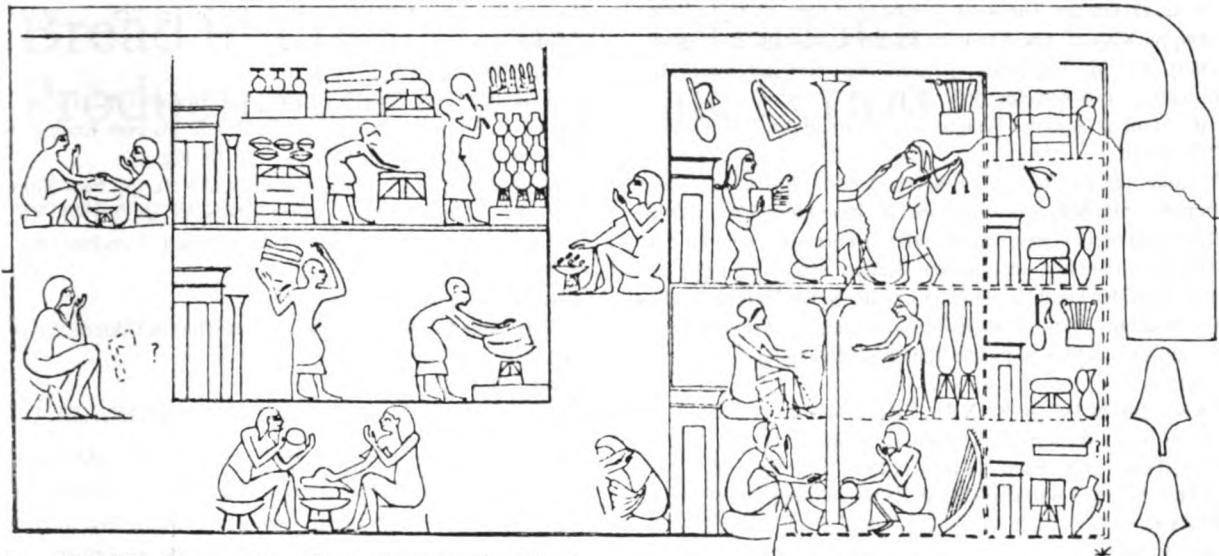
MME 1983:2, Sektion 5.

Der letzte unvollständige Raum ganz rechts (Sektion 5) ist ebenfalls ein Magazin. Drei Behälter sind hier teilweise zu erkennen: zwei konische Schalen mit weiter Öffnung, die oberhalb der Tür sehr gross, die daneben kleiner wiedergegeben. Auf der oberen sind noch die Reste von vier kreisförmigen Umrisslinien zu erkennen, die wohl Brote vorstellen. Ein ähnliches rundes Brot ist auch in der unteren Schale erkennbar. Der letzte Gegenstand oben rechts ist vielleicht der Überrest eines leichten Lattentisches mit Vorräten darauf.

Um dieses Amarna-Relief in seinen ursprünglichen Kontext zurückführen zu können, ist vor allem die Bestimmung der Funktion der verschiedenen Personen

von Bedeutung. Die Männer – vorausgesetzt, dass es sich bei der zweiten und vielleicht auch der dritten Figur von links um einen Jungen bzw. Mann handelt – sind durch ihre Attribute, Besen und Vorratsgefässe – als Diener gekennzeichnet, die ihre Tätigkeit sowohl in Tempel – als auch Palastmagazinen ausüben können. Dies geht deutlich aus den Reliefzyklen der Gräber in Amarna hervor.⁴⁴ Männer allein werden hier als Diener in Interieurs gezeigt. Sie können übrigens auch allein im Tempel als Musikanten erscheinen.⁴⁵ Auf ihre verschiedenen Funktionen in öffentlichem Zusammenhang ausserhalb der Gebäude soll hier nicht eingegangen werden. Schwieriger dagegen ist die Deutung der beiden Frauen in der vierten Sektion des Stockholmer Reliefs. Deshalb soll etwas eingehender untersucht werden, in welchen Situationen Frauen in Amarna überhaupt auftreten. Hier soll nochmals hauptsächlich mit Hilfe der Grabreliefs eine kurze Übersicht gegeben werden über das Vorkommen von Frauen sowohl bei öffentlichen Anlässen wie auch bei Tätigkeiten in Innenräumen. Eine Durchsicht der Grabpublikationen ergibt folgendes Bild: bei öffentlichen Anlässen erscheinen Frauen – abgesehen von den Begleiterinnen der Prinzessinnen und des Königspaares – fast nur in offiziellem Zusammenhang als Musikantinnen. Dies ist etwa der Fall, wenn sich das Königspaar im Erscheinungsfenster zeigt, um einen verdienten Beamten mit Goldkragen zu belohnen,⁴⁶ oder bei der Audienz des Königs,⁴⁷ weiter bei der Auffahrt des Königspaares zum Tempel⁴⁸ oder bei seinem Opfer im Tempel.⁴⁹ In alltäglichen privaten Situationen, in denen das Königspaar nicht figuriert, sind Frauen in den Gräbern von Amarna fast nie dargestellt. Eine Ausnahme bilden zum Beispiel die Klagefrauen beim Begräbniszuge im Grabe des Huya.⁵⁰

In Innenräumen treten Frauen anscheinend nur als Musikantinnen auf, und zwar oft in offiziellem Zusammenhang, um die Mahlzeit der Königsfamilie zu untermalen, so besonders bei Königin Tejes Besuch in Amarna. Die Instrumente dieser Kammermusikensembles sind Bogenharfe, Laute, Leier und wohl auch Winkeleitarfe.⁵¹ Nur in drei Gräbern finden sich Szenen, die Frauen allein unter sich bei privater Beschäftigung zeigen.⁵² In allen drei Gräbern, bei Ahmes, Tutu und Eje, handelt es sich um Räumlichkeiten im Palast hinter dem Erscheinungsfenster, die einen mehr privaten Charakter haben. Sie sind durch einen langen Korridor von dem offiziellen Teil mit dem Erscheinungsfenster abgetrennt. Bei Ahmes befinden sich die Räume mit den Frauen zwischen einer königlichen Suite und den Räu-



Der königliche Harem, Ejes Grab: Rock Tombs VI, pl. XXVIII.

men der Männer.⁵³ Alle drei Komplexe haben eigene Vorratsräume. Leider sind die Personen im Frauenhaus nicht sehr gut erhalten, doch scheint es sich um sechs Gestalten zu handeln, die sich mit Musik auf der Laute, Bogenharfe und wohl Leier und vielleicht auch mit Tanz vergnügen. Ein Kanal mit einem Teich und ein Baum am oberen Ende des Bildes deuten auf eine parkartige Umgebung.

Noch isolierter sind die Frauen bei Tutu und Eje untergebracht. Es handelt sich in beiden Gräbern um doppelte spiegelbildliche Gebäudewiedergaben, und in beiden Fällen ist die Behausung der Frauen – anders als bei Ahmes – vom Rest der übrigen Baulichkeiten noch besonders abgetrennt: sie befindet sich, durch einen besonderen Gang mit Wächtern abgeschirmt, in der hintersten Ecke des Gartens, der auch hier durch Wasserbecken und Bäume angedeutet ist. Die Figuren bei Tutu sind schlecht erhalten, sie können aber wohl als Musikantinnen und Tänzerinnen betrachtet werden. Am vollständigsten sind die Szenen in Ejes Grab: dort

sind einige Frauen mit Essen oder mit ihrer Toilette, die meisten aber mit Musik und Tanz beschäftigt.⁵⁴ Hier werden Lauten, Leiern, Winkel – und Bogenharfen gespielt, und weitere Exemplare dieser Instrumente hängen an der Wand und sind auch in den vier kleinen dazugehörigen Magazinen aufbewahrt.

Nach diesem Befund aus den Gräbern zu urteilen, scheint eine Lokalisierung der Räume und ihrer Insassen auf dem Stockholmer Relief in einen Palast in Amarna am naheliegendsten zu sein. Unser Relief mit Palastszenen kann aber natürlich in einem Tempel angebracht gewesen sein. Doch muss man sich der Tatsache bewusst sein, dass die Tempelreliefs aus Amarna nur bruchstückhaft erhalten sind. Es ist denkbar und möglich, dass auch ganz andere Tätigkeiten und Funktionen von Frauen ursprünglich abgebildet waren und dass somit unsere Personen in einem anderen Zusammenhang und in einer anderen Art von Gebäude beheimatet gewesen sein können.

¹ N. de G. Davies, *The Rock Tombs of el Amarna V*, London 1908, pl. XXV ff; alle Bände im folgenden als „Rock Tombs“ zitiert. Cf. M. Lichtheim, *Ancient Egyptian Literature II*, Berkeley – Los Angeles 1976, 48 ff.

² R. Hanke, *Amarna-Reliefs aus Hermopolis*, Hildesheim 1978, 76 ff.

³ Hanke, op. cit., 67 f. G. Roeder, *Amarna-Blöcke aus Hermopolis*, MDAIK 14, 1956, 160 ff, besonders 168 f. Dass Kalksteinreliefs – wenn auch anderen Formats – ebenfalls in Palästen zumindest an gewissen Stellen vorhanden gewesen sind, zeigt der Fund Nr. 34/42 aus dem „North Harem“: J. D. S. Pendlebury et al., *The City of Akhenaten III*, London 1951, 45 und pl. LXXIII 8, 9; alle Bände im folgenden als „City“ zitiert.

⁴ Rock Tombs IV, pl. XXXII f; Lichtheim, op. cit., 90 f.

⁵ G. Roeder, *Amarna-Reliefs aus Hermopolis*, ed. R. Hanke, Hildesheim 1969. Auch die Reliefs PC 83 und 289, ibid. Taf. 184 bzw. 211 befinden sich im Medelhavsmuseet (MME 1983: 3 und 4).

⁶ Rock Tombs I, pl. XI; Cf. auch II, pl. XIX.

⁷ City I, pl. XXI 3 no. 22/150 und p. 78.

⁸ Tempel: Rock Tombs I, pl. XXVI; II, pl. XIX. Palast: I, pl. XVIII; VI, pl. IV, XIX und XXVIII.

⁹ City I, pl. XVII 3 (Eastern Village); Profile: ibid., pl. XLVIII no. XIX/100.

¹⁰ Cf. Rock Tombs I, pl. XVIII, XXVI; III, pl. XIII, XVIII, XXXIII; IV, pl. VIII; VI, pl. XVII, XIX.

¹¹ Cf. A. Badawy, *A History of Egyptian Architecture, The Empire or the New Kingdom*, Berkeley – Los Angeles 1968, 22 fig. 9.

¹² J. D. Cooney, *Amarna Reliefs from Hermopolis in American Collections*, Mainz 1965, 74 f Nr. 47.

¹³ Cf. J. Vandier, *Manuel d'archéologie égyptienne IV*, Paris 1964, 272 ff.

¹⁴ N. de G. Davies, *The Tomb of Rekh-mi-rê at Thebes*, New York 1943, I 43 ff; II pl. L.

¹⁵ Roeder, *Amarna-Reliefs*, Taf. 30, Nr. 491 VII; S. 191, 226, 232.

¹⁶ Rock Tombs III, pl. VII.

¹⁷ City I, pl. LI no. XLIII/1015 und p. 139. Rock Tombs I, pl. XXV, XXXI f.

¹⁸ Rock Tombs II, pl. XXXV.

¹⁹ Rock Tombs I, pl. X, XV, XX; III, pl. XXXI.

²⁰ Rock Tombs III, pl. XXXIII.

²¹ Etwa Rock Tombs VI, pl. XXVIII.

²² Rock Tombs II, pl. XXXVI.

²³ H. S. Baker, *Furniture in the Ancient World*, London 1966, fig. 162 a, b, 165. G. Killen, *Ancient Egyptian Furniture I*, Warminster 1980, pl. 110, 114.

²⁴ City III 2, pl. LXXVIII 5 no. 33/272 und p. 125.

²⁵ Killen, op. cit., 48 f und pl. 82.

²⁶ Ibid., 49 und pl. 84.

²⁷ Cf. R. E. Freed, *Egypt's Golden Age*, Boston 1982, 172 und fig. 46. H. Bonnet, *Die ägyptische Tracht bis zum Ende des neuen Reiches*, Leipzig 1917, 70, Taf. IX Fig. 47.

²⁸ Westberlin: C. Aldred, *Akhenaten and Nefertiti*, New York 1973, 102 no. 16. Ejes Grab: Rock Tombs VI, pl. XXVII, XL.

²⁹ Ch. Desroches-Noblecourt, *Tutankhamen*, London 1963, pl. V.

³⁰ Roeder, *Amarna-Reliefs*, 202, 212.

³¹ H. Hickmann, *Ägypten, Musikgeschichte in Bildern*, Leipzig 1961, 100, Abb. 62.

³² Ibid., 70 f, 82 f, 144 f.

³³ Rock Tombs II, pl. VIII, X; III, pl. V, VIII, IX, XIII; IV, pl. V; VI, pl. XXIX.

³⁴ Rock Tombs III, pl. VI.

³⁵ Rock Tombs III, pl. X.

³⁶ Rock Tombs III, pl. XVIII.

³⁷ N. de G. Davies, *The Tomb of Nefer-hotep at Thebes I*, New York 1933, pl. XLV.

³⁸ Cf. Hickmann, op. cit., 130 f und idem, *Les harpes de l'Égypte pharaonique*, BIE 35, 1954, 309 ff.

³⁹ Roeder, *Amarna-Reliefs*, Taf. 71 Nr. 470 VII und S. 202, 315.

⁴⁰ Rock Tombs VI, pl. VI, XXVIII.

⁴¹ P. E. Newberry, *El Bersheh I*, London (1895), 33, pl. XXVI; idem, *Beni Hassan II*, London 1894, pl. IV; N. de G. Davies, *Five Theban Tombs*, London 1913, pl. XXXVII.

⁴² So Cooney, siehe Anm. 12.

⁴³ Mir ist nicht die Abhandlung von N. Cherpion zu diesem Thema zugänglich, nur ihr Artikel: *Mode et société à l'époque amarnienne, Revue des archéologues et historiens d'art de Louvain* 10, 1977, 18 ff.

⁴⁴ Tempel: Rock Tombs II, pl. XIII f, XIX; Palast: III, pl. XIII; IV, pl. VIII.

⁴⁵ Rock Tombs I, pl. XI; III, pl. XXX.

⁴⁶ Rock Tombs I, pl. VI, IX; II, pl. XI, XXXIII, XXXVI; VI, pl. XVIII, XX.

⁴⁷ Rock Tombs, VI, pl. VI.

⁴⁸ Rock Tombs I, pl. X A, XIII.

⁴⁹ Rock Tombs II, pl. XVIII.

⁵⁰ Rock Tombs III, pl. XXIII.

⁵¹ Rock Tombs II, pl. XXXII (Winkelharfe?); III, pl. V, VII.

⁵² Rock Tombs III, pl. XXXIII; VI, pl. XVII, XIX; VI, pl. XXVIII.

⁵³ So Davies' Deutung: Rock Tombs III 29 ff.

⁵⁴ Rock Tombs VI, 19 ff und 36 f.

Bread in the Cypriote Terracotta Production of the Archaic Period

Frieda Vandenabeele

The Medelhavsmuseet of Stockholm possesses two Cypriote terracottas, one from Amathus (fig. 8) being a figure carrying a plate with cakes or breads, the other a figure preparing dough, from Vouni; both belong to a larger group of figurines illustrating bread-making, bread-transport, bread-offering and bread-eating.¹

Preparing dough

Preparing dough is illustrated by at least six terracottas, two from Tamassos (?), one from Kourion, one from Vouni and two from an unknown provenance.

1. Tamassos (?) (fig. 1)

Mus. : Nicosia ; *Inv.* : B 96/1935 ; *H.* : 6,5 cm ; *L.* : 9,5 cm ; *Context* : – ; *Techn.* : reddish clay, cream slip (?), solid, hand-made, traces of black and red paint ; *Dam.* : broken ; *Rest.* : figure pasted ; *Bibl.* : H.-G. Buchholz, "Tamassos, Zypern 1974–1976", *AA* (1978), p. 202, Fig. 48 b ; V. Karageorghis, *Μουσεῖα καὶ Μνημεῖα τῆς Ελλάδος, Κύπρος*, Athens s.d., fig. 86 ; *Date* : –.

A figure is sitting on the floor in front of a "table". It pulverizes grain above a sieve separating chaff from wheat. A second sieve is placed on the lowest part of the "table". The figure wears a head-band. The nose is in relief. The fingers are indicated by incisions.

2. Tamassos (?) (fig. 2)

Mus. : Nicosia ; *Inv.* : B 97/1935 ; *H.* : 6,5 cm ; *L.* : 10,5 cm ; *Context* : – ; *Techn.* : reddish clay, solid, hand-made ; *Dam.* : broken, right arm of the small figure missing ; *Rest.* : small figure pasted, right arm restored in plaster ; *Bibl.* : H.-G. Buchholz, "Tamassos, Zypern, 1974–1976", *AA* (1978), p. 201–202 ; V. Karageorghis, *Μουσεῖα καὶ Μνημεῖα τῆς Ελλάδος, Κύπρος*, Athens

s.d., fig. 86 ; *Date* : –.

Two figures are preparing grain, the one on the left pulverizing it with a stone, the right one separating chaff from wheat above a sieve.



Fig. 1, Nicosia B 96/1935.



Fig. 2, Nicosia B 97/1935.

3. Kourion

Mus. : - ; *Inv.* : - ; *H.* : ? ; *L.* : ? ; *Techn.* : clay (?), solid, hand-made, painting (?) ; *Dam.* : - ; *Rest.* : - ; *Bibl.* : P. Cintas, "Tābūn", *Oriens Antiquus* 1 (1962), p. 243, pl. LVII : 6 ; R. Dussaud, *Les civilisations préhelléniques dans le bassin de la mer Egée*, Paris 1910 (1st ed.), p. 182, fig. 128, and p. 260 ; M. Ohnefalsch-Richter, *Kypros, die Bibel und Homer*, Berlin 1893, p. 173, n° 19 ; *Date* : -.

Two figures are preparing grain, the one on the left pulverizing it with a stone, the right one separating chaff from wheat above a sieve.



Fig. 3, Metropolitan Museum of Art. 74.51.1643.

4. Vouni

Mus. : Stockholm, Medelhavsmuseet ; *Inv.* : Vouni, 302 ; *L.* : 7,5 cm ; *Context* : palace, room 82 ; *Techn.* : clay, light buff, solid, hand-made, traces of black and red paint ; *Dam.* : head, neck and lower part of the figure missing, edge of the trough chipped ; *Rest.* : - ; *Bibl.* : A. Westholm, *SCE III: Vouni*, Stockholm 1937, p. 250, pl. LXXVIII : 302.5 ; *Date* : -.

The figure sits on the floor with an oval basin on its knees, both arms stretched forwards, the hands resting on the bottom of the receptacle. In front of the hands is a pellet of clay representing the dough. The fingers are indicated by paint.

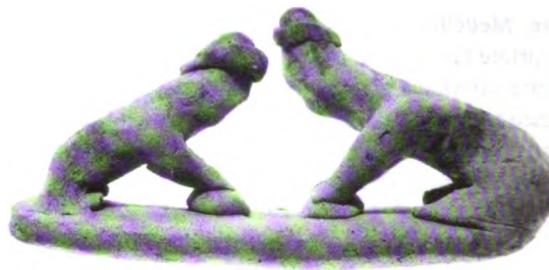


Fig. 4, Nicosia 1982/VI-24/1.

5. Unknown provenance (fig. 3)

Mus. : New York, Metropolitan Museum of Art ; *Inv.* : 74.51.1643 ; *H.* : 7,5 cm ; *L.* : 15,4 cm ; *Context* : - ; *Techn.* : clay: reddish, solid, hand-made, pellets for the ears, painting black, red and yellow on the two figures, the sieve, the bowls and the table; *Dam.* : head of the right figure missing ; *Rest.* : - ; *Bibl.* : J. L. Myres, *Metropolitan Museum of New York. Handbook of the Cesnola Collection*, New York 1914, p. 346-347, n°2120 ; *Date* : -.

The left figure holds a sieve and a winnowing pan. Two bowls are placed on either side. It wears a head-dress. The eyes, the dress (?) and the fingers are indicated by paint. The ears are formed by a clay-pellet. The right one, according to Myres, is grinding "with the primitive saddle quern . . . The grains of corn are shown by dots of black paint".

6. Unknown provenance (fig. 4)

Mus. : Nicosia ; *Inv.* : 1982/VI-24/1 ; *H.* : 5 cm ; *L.* : 11 cm ; *Context* : - ; *Techn.* : yellowish cream clay, solid, hand-made, red band round waist of each figure ; *Dam.* : - ; *Rest.* : - ; *Bibl.* : V. Karageorghis, "Chronique . . . en 1982", *BCH* 107 (1983), p. 906-907, fig. 2 ; *Dat.* : -.

Two sitting or kneeling figures are pulverizing grain with a stone. They wear a modelled head-band and a girdle indicated by red paint.

Making bread

Making bread is illustrated by three terracottas, two from Amathus and one from Ormidhia (?).

1. Amathus (fig. 5)

Mus. : Limassol ; *Inv.* : LM 815/27 ; *H.* : 8,8 cm ; *L.* : 8,7 cm ; *Context* : tomb 302 ; *Techn.* : cream rose clay, solid, hand-made, pellet for the ear, traces of red paint on the table and the body ; *Dam.* : - ; *Rest.* : - ; *Bibl.* : V. Karageorghis, "Chronique . . . en 1980", *BCH* 105 (1981), p. 1018, fig. 119 ; *Date* : CA I to CC I.



Fig. 5, Limassol LM 815/27.

A figure stands over a three-legged table kneading a lump of dough. The lower part of the body is fixed to the third leg of the table. Two loaves of bread are placed at the back of the table.

A similar terracotta of the VIIth century B.C. (?) is known from Achzib in Palestine.² A certain resemblance may also be noted with a terracotta from Camiros on Rhodes without date,³ but here the woman stands before a three-legged bowl. Its head is made in a mould reminding one of the style of the Boeotian terracottas popular around 500 B.C.⁴

Fig. 6, Metropolitan Museum of Art 74.51.1646.



2. Amathus

Mus. : Limassol ; Inv. : 704/75, Amathus tomb 190.

Another terracotta group from Amathus, unpublished, shows two figures side by side kneading dough in front of a basin. Small loaves are placed on each side of the receptacle. The whole terracotta is solid and hand-made.

3. Ormidhia (?) (fig. 6)

Mus. : New York, Metropolitan Museum of Art ; Inv. : 74.51.1646 ; H. : 12,1 cm ; L. : 15,5 cm ; Context : -- ; Techn. : clay reddish, solid, hand-made, pellets for the nose and the ears, brown and red paint for the eyes, the body and the base ; Dam. : movable arms missing ; Rest. : broken at the neck and mended, wooden shaft on which figure swivels is modern ; Bibl. : J. L. Myres, op. cit., p. 348, n°2123 ; L. Palma di Cesnola, A Descriptive Atlas of the Cesnola Collection in the Metropolitan Museum II/2, New York 1894, pl. XXVII : 220 ; Date : --.

A terracotta of the Cesnola collection made of separated pieces, represents a figure standing over a table. It wears a headdress. The nose and the ears are indicated by pellets, the eyes by paint. The arms must have been movable, as shown by the holes. The body ceases at the hips, where it was fastened by a pin to two projections from the table-top.

In analogy with a figurine found in the necropolis from Camiros on Rhodes, we may suppose that the figure holds a rolling-pin in its hands.⁵ In this case, if the body is moved up and down, it pivots from the hips and the rolling-pin moves along the table-top. The conception of both terracottas is quite the same, but the figurine from Rhodes represents without doubt a woman, the body being made in a mould reminding once again the style of the Boeotian terracottas popular around 500 B.C.

Baking bread

One terracotta shows the process of baking bread.

1. Unknown provenance (fig. 7)

Mus. : New York, Metropolitan Museum of Art ; Inv. : 74.51.1755 ; H. : 8,2 cm ; L. : 11 cm ; Context : -- ; Techn. : clay greyish yellow, solid, hand-made, paint on the body of the woman and the oven ; Dam. : head missing ; Rest. : -- ; Publ. : J. L. Myres, op.cit., p. 348, n°2122 ; Date : --.

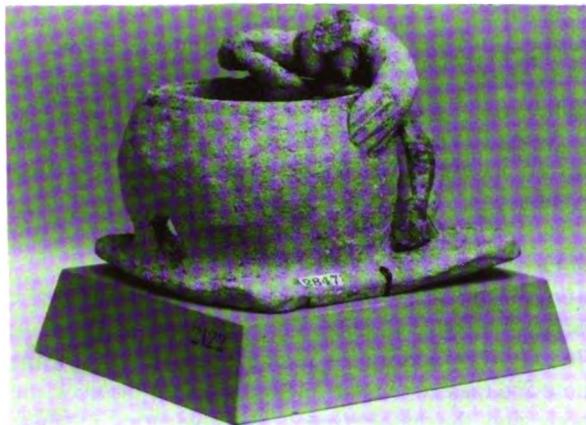


Fig. 7, Metropolitan Museum of Art 74.51.1755.

A woman is baking bread in a circular oven, throwing the dough on the hot inner surface. The same practice is still in use in the Near East and in North Africa. The fingers, the body and the border of the oven are painted. The front of the oven is provided with a hole. Five flat circular discs are applied around the inside of the oven.

A similar scene is shown by a terracotta found in the necropolis of Carthage, but the head is made in a mould and a child is looking in the oven.⁶

Transporting or offering bread

At least two terracottas show a figure holding a plate with cakes or loaves of bread.

1. Unknown provenance

Mus. : Copenhagen, Ny Carlsberg Glyptotek ; *Inv.* : 9174 ; *H.* : 14,1 cm ; *Context* : – ; *Techn.* : brown micaeuous clay, white slip, face in mould, trunk hollow, rest solid, black paint on the hair, the plate and the body ; *Dam.* : right arm broken, small parts of lower trunk missing ; *Rest.* : – ; *Bibl.* : N. Breitenstein, *Catalogue of Terracottas. Cypriote, Greek, Etrusco-Italian and Roman*, Copenhagen 1941, p. 4, n°26, pl. 3 : 26 ; *Date* : –.

The figure holds a plate containing cakes or loaves of bread in its two arms bent forward in front of the breast. The hair in front is arranged in regular curls and a lock seems to fall towards the shoulder on both sides. The face is made in a mould.

2. Another terracotta similar to the figurine from Copenhagen is mentioned by Karageorghis.⁷

Eating bread

The eating of bread is shown in two terracottas, one from Amathus and one from an unknown provenance.

1. Amathus (fig. 8)

Mus. : Stockholm, Medelhavsmuseet ; *Inv.* : tomb 9.107 ; *H.* : 13,3 cm ; *Context* : tomb 9 ; *Techn.* : clay, light greyish buff, cylindrical body with hollow, splayed base, handmade, pellets for the ears, traces of black and red paint on the body, of red paint on the loaves of bread or the cakes ; *Dam.* : – ; *Rest.* : – ; *Bibl.* : V. Karageorghis, C.-G. Styrenius and L. Winbladh, *Cypriote Antiquities in the Medelhavsmuseet, Stockholm*, Medelhavsmuseet, Memoir 2, Stockholm 1977, p. 41, pl. XXVII : 2 ; A. Westholm, *SCE II: Amathus*, Stockholm 1935, p. 61, n°107, pl. XVII : 107, pl. 158 : 5 ; *Date* : CA I.

The terracotta statuette holds in its left arm a plate with cakes or loaves of bread; its right arm is bent towards the mouth. The figurine is probably intended to be shown eating the food. The hair is combed from the middle in two plaits hanging behind the disc-shaped ears.



Fig. 8, Medelhavsmuseet A.9.107.



Fig. 9, Collection Liveris.

2. Unknown provenance (fig. 9)

Mus. : private collection Liveris ; **Inv.** : - ; **H.** : 11,5 cm ;
Context : - ; **Techn.** : yellowish clay, solid, hand-made, black and red paint ; **Dam.** : feet of the figure and one of the struts connecting the legs of the couch missing ;
Rest. : - ; **Bibl.** : P. Flourentzos, "Four Archaic Terracottas from Cypriote Private Collections", *RDAC* (1977), p. 152-153, pl. XLIII : 3 ; **Date** : CA I.

The man is lying on a couch supporting his head with his left hand, the other hand resting on his side. In front of him stands a dish with food. The food consists, to judge from its shape, of two fishes and one piece of bread. The man wears a red pointed cap. The eyes are indicated by black paint. The body and the couch are covered with black and red stripes.

To conclude, our figurines are made in a rough manner, using the "snowman technique" with details shown by means of clay-pellets, relief, incisions or black and red paint. Only in two cases a mould was used for the face, making these part of the enormous group of tambourine-players, bearers of animals, lychnophorai, etc.⁸

For most of the terracottas dealing with bread, the chronology is very uncertain. In a general way the Cypriote *scènes de genre* are placed in the Cypro-Archaic period, but only one single terracotta from a tomb at Amathus has been found in a clear CA I context (ca 750-600 B.C.). Another from the same site can be placed in the Cypro-Archaic or early Cypro-classical period (ca 750-400 B.C.). As regards the remaining ones, nothing is known about the conditions of their discovery.

In some cases a relationship between our figurines and those of the Phoenico-Punian world can be established. Perhaps the great influence of the Phoenician

culture on the Cypriote production of terracottas such as the representations of Astarte and Baal, the *lychnophorai*, etc.⁹ also explains the way the Cypriots treated the *scènes de genre*.

As far as a link between the Cypriote and the Rhodian production may be shown,¹⁰ a direct Phoenician influence on Rhodes could be possible.

¹ I wish to thank very much indeed Dr Vassos Karageorghis, Director of the Department of Antiquities, and the staff of the museum of Nicosia for their constant aid. I am also very grateful to Dr Karageorghis for permitting me to publish the photographs fig. 1, 2, 4 and 5, to Dr Flourentzos for fig. 9 and to Dr Styrenius for fig. 8. Mrs Joan R. Mertens kindly allowed me to reproduce photographs of the terracottas of the Cesnola collection (fig. 3, 6 and 9): "The Metropolitan Museum of Art. The Cesnola Collection; purchased by subscription, 1874-1876".

Unfortunately I did not have the opportunity of studying the terracottas of the Medelhavsmuseet (Stockholm), of the Metropolitan Museum of Art (New York) and of the Ny Carlsberg Glyptotek (Copenhagen).

² J. Deshayes, *Les civilisations de l'Orient ancien*, Paris 1969, fig. 135.

³ R. A. Higgins, *Catalogue of the Terracottas in the Department of Greek and Roman Antiquities of the British Museum*, London 1954, p. 88, n°234, pl. 39.

⁴ R. A. Higgins, *Greek Terracottas*, London 1967, p. 77.

⁵ R. A. Higgins, *Catalogue British Museum*, p. 88, n°233, pl. 39.

⁶ H. Ben Younes, *De Carthage à Kairouan. 2000 ans d'art et d'histoire de Tunisie. Musée du Petit Palais de la Ville de Paris*, 20 octobre 1982-27 février 1983, p. 56, n°42; P. Cintas, "Täbün", *Oriens Antiquus* 1 (1962), p. 233-234, 238 and 242, pl. LVI: 1. According to him the terracotta is of Cypriote origin and the head resembles that of a woman giving birth to a child (p. 241-242, pl. LVI: 4); M. Sznycker, "La littérature punique", *Archéologie vivante* I/2, décembre 1968 - février 1969, p. 147.

⁷ V. Karageorghis, *Μουσεῖα καὶ Μνημεῖα τῆς Ἑλλάδος*, Kύπρος, Athens s.d., fig. 80.

⁸*Ibidem*.

⁹ F. Vandenabeele, "Les terres cuites chypriotes à lampe" *Acts of the Second International Congress of Cypriot Studies*, Nicosia 1985, p. 301-306; eadem "L'influence phénicienne sur la coroplastie chypriote", *Studia Phoenicia* III, Leuven 1985, p. 203-211.

¹⁰ The Cypriote influence is equally noticeable in the vase-production (J. N. Coldstream, *Greek Geometric Pottery*, London 1968, p. 380-381).

Two Cypriote Pan-tiles in Stockholm

Örjan Wikander

The Swedish Cyprus Expedition (1927–1931) was of decisive importance for the development of Cypriote archaeology. For the first time, investigations were undertaken on a scholarly level around the entire island, yielding finds from almost every period up to the Roman Empire. The extensive publications which appeared from 1934 onwards remain an important basis for research on most topics concerning prehistoric and ancient Cyprus.

Some fields of research are, of course, treated less elaborately. This is the case, for example, with private architecture, and those interested in roof constructions in general and tiled roofs in particular will find little in the publications. In the concluding architectural discussions in Volume IV, roof-tiles are mentioned no more than twice, and then only in passing. In part, this is apparently the result of the surviving, eastern, architectural traditions. Flat roofs made of horizontal, wooden beams and a reed matting covered with earth seem to have occurred regularly into the Classical period, and even later.¹ Still, a detailed study of the material presented in Volumes I–III proves that remains of tile-roofs were observed at a number of sites.

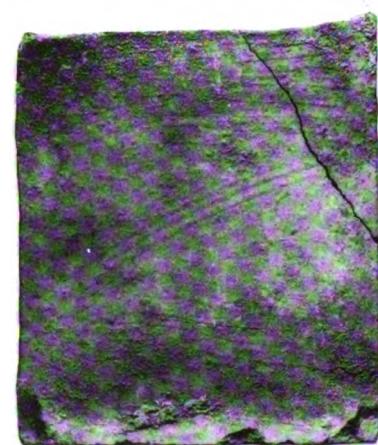
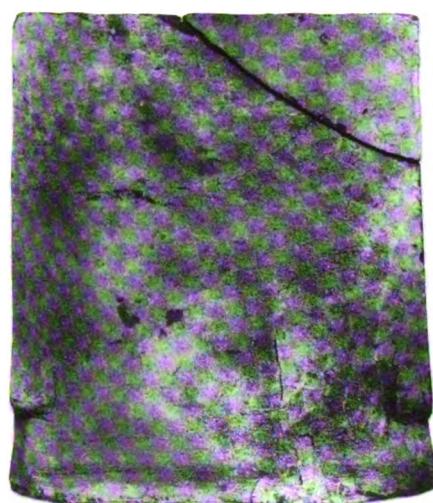
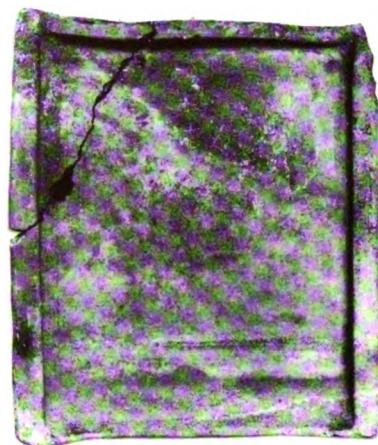
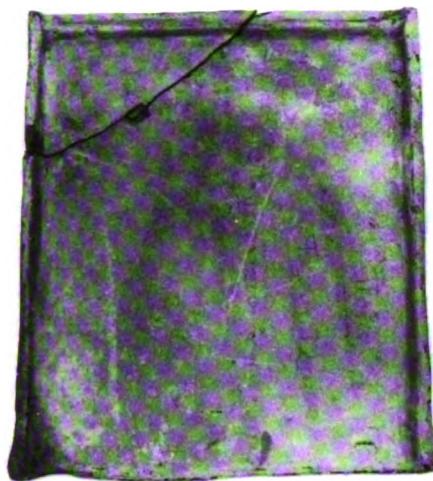
The earliest examples derive from the sanctuary at Idalion, where the inner temenos (Room LIV) “was provided with a passage covered with a roofing of tiles projecting from the walls”. The fragments were few and too insignificant to allow the dimensions of the tiles to be established but were sufficient to show that we are dealing with flat pan-tiles and semi-cylindrical cover-tiles.² Chronologically, they are to be assigned to Cypro-Archaic II (c. 600/475 B.C.).

In the Classical period, tiled roofs are known from two temples at Vouni. The temple of Athena yielded ten fragments of palmette antefixes,³ but also, as repeatedly stated in the field journal, numerous frag-

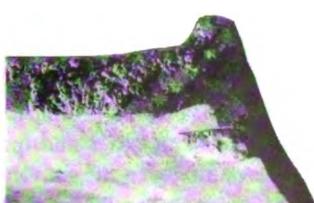
ments of “large roof-tiles”. There are, however, no indications of their shape and appearance. Concerning the little *templum in antis* at Paradisotissa, Gjerstad maintains that “no roof-tiles were found, and the roof was therefore probably made of a reed-matting coated with earth and lime. Consequently, if the plan . . . represents a local variety of the Greek temple type, the superstructure does not seem to have been influenced by Hellenic architecture . . .”.⁴ This, however, is in open conflict with the excavation report, which mentions “a layer of debris containing plenty of fragments of roofing-tiles” and a palmette antefix “of the same general type as that which was found at the temple of Athena”.⁵ That version is confirmed by the field journal, which also provides important, additional information: “Among the roof-tiles, there were fragments decorated with meanders. Seemingly, these were once located along the longside walls, where they were also discovered.”

Roman roof-tiles were discovered at Soli, in the *cella* of Temple B (Cholades), and in the stage-building of the theatre. Concerning the former group of fragments, no further information is provided,⁶ while the latter consisted, on the one hand, of “flat, rectangular tiles with a raised edge along one short side” and, on the other, of tiles “of smaller size and trapezoid in section” – apparently a description of ordinary, Corinthian cover-tiles.⁷

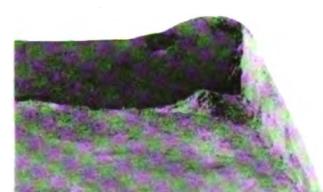
In no case could the dimensions of the tiles be ascertained, and the few descriptions of the fragments give us only a very rough idea of their appearance. I have not been able to locate any tile fragment in the sherd collections preserved at the Medelhavsmuseet. However, these collections do include two complete pan-tiles from Cyprus, one of them unmarked and the other marked in blue pencil with a Greek text saying that it

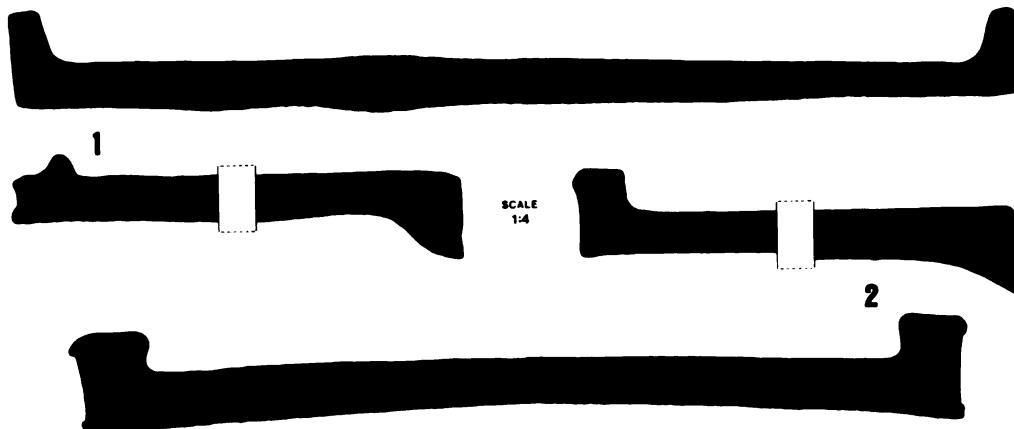


1



2





derives from the necropolis of Marion, Tomb 32.

A number of tombs at Marion had small niches cut into the walls of the chamber, mostly sealed with rubble or slabs of limestone, but in two cases with ordinary roof-tiles. In Tomb 32, there were three such niches, one of which (Niche 3) was closed by a well-preserved pan-tile. The finds in the niche were dated to the end of Cypro-Classic I (c. 425/400 B.C.).⁸ In Tomb 37, one of the three niches (Niche 3) "was found closed by a large roof-tile of terracotta. Niches 1 and 2 were found open, but have originally been closed by poros slabs and roof-tiles of terracotta, which were found scattered among the debris of the chamber." The finds in Niche 3 were dated to the middle of Cypro-Classic II (c. 375/350 B.C.).⁹ The complete roof-tiles from these tombs are to be identified with the two pan-tiles preserved at the Medelhavsmuseet.

(1) *Corinthian pan-tile*, tapering in width towards the upper short side

L. 62.0–62.5 W. 53.0–57.0 Th. 1.7–5.0

Left raised border: W. c. 2.5–3.5 H. 4.5–6.5 (1.8–2.9 above tile surface)

Right raised border: W. c. 2.5–4.0 H. 4.3–6.7 (1.8–3.4 above tile surface)

About 1.5 cm from the upper short side, there is a raised border c. 2.0–2.5 cm wide and 0.8–1.1 cm high. On the lower edge, a lip hangs 1.9–2.8 cm below under-side of tile. The lower corners are bevelled considerably to make the overlapping more efficient. On each long

side, c. 9.5/11.0 cm from the lower short side, a c. 5.5-cm-wide "knob" protrudes for c. 1.5–2.0 cm below under-side of tile; these knobs were apparently meant to rest against the upper edge of the next tile.

The clay is well fired, varying from light greyish-brown to greyish-beige. The surfaces, including under-side, are fairly smooth, with faint scratches on top. Traces of the frame are to be seen on outsides of raised borders and on upper edge. Otherwise, the raised borders are very rough and uneven, apparently made by hand. The tile is complete, even though the upper left corner is broken off. Almost the entire surface is covered with lime incrustation, partly in thick layers. This pan-tile can be certainly identified with the complete tile found in Marion, Tomb 32.

(2) *Rectangular, Corinthian pan-tile*

L. 54.0–56.5 W. 47.0–47.5 Th. c. 2.0–5.0

Left raised border: W. c. 3.5–4.5 H. 5.2–5.9 (1.7–2.5 above tile surface)

Right raised border: W. c. 3.5 H. 5.0–5.6 (2.1–2.4 above tile surface)

A border, c. 3.0 cm wide and 1.5–2.1 cm high, rises directly along the upper short side. It is almost as high as the raised borders of the long sides and more distinctly profiled than the one on pan-tile no. 1. On the lower edge, a lip hangs c. 1.5–2.0 cm below under-side of tile. The lower corners are slightly bevelled on under-side for c. 5.0/6.0 cm; these bevels were apparently meant to rest upon the raised borders of the next tile.

while the lip was hanging over the upper raised border. The clay is heavily tempered and fired greyish-yellow. The surfaces, including under-side, are smooth. There are scratches on top, including raised borders, some diagonal lines forming a cross over the upper surface; however, they seem to be too faint to be taken as makers' marks. Traces of the frame are clearly visible on the outsides of long-side borders. The borders are carefully shaped, with distinct profiles.

The tile is complete, even though the upper left corner is broken off. On the upper right corner, the outside of the raised border was chipped after firing, seemingly with light taps of a hammer – perhaps necessary to adapt it to the niche. Almost the entire surface is covered with lime incrustation, partly in thick layers. This pan-tile is presumably the one found in Marion, Tomb 37.

The shape of these tiles shows that we are not dealing with terracotta plaques made particularly for use in tombs. They are ordinary, mass-produced tiles and, even though they possibly never rested on a roof, they provide important evidence concerning the little-known tiled roofs on Cyprus in the Classical period.

The two pan-tiles derive from different tombs, and from burials which differ chronologically by several decades. They also differ in shape on a number of points. Still, from a functional point of view, they are basically identical. In trying to place them in the typology of Corinthian pan-tiles, the decisive feature is the presence of a raised border along or close to the upper short side, and an overhanging lip on the lower one. This method of overlapping combines with details like bevels and "knobs" under the lower corners to create a particularly efficient joint between the tiles; it is not only waterproof but also prevents the tiles from sliding down the roof.

There is little published evidence of ancient roof-tiles on Cyprus, but we do have some indications that this type of tile was widespread and remained in use for a long period of time. This must reasonably be the type discovered by the Swedish Cyprus Expedition in the Roman theatre at Soli: "flat, rectangular tiles with a raised edge along one short side". More important, though, in this connection are the small fragments found recently in a sanctuary at Kition, constructed at the very end of the V century B.C.¹⁰ These accurately published and convincingly reconstructed tiles are not only contemporary with the Marion tiles but constitute very close, typological parallels.

One circumstance is of particular importance here. Central Greece was presumably the ultimate source of all ancient tile-roofs, but the manner in which the diffusion was effected varied considerably. Central Italy, for instance, took over no more than the idea and the three basic components of the roof (pan-tiles, cover-tiles and ridge-tiles), while the actual shape of these tiles was the result of a completely local development. Cyprus, on the other hand, received a finished, Greek, tile-roof. This is evident from the palmette antefixes found at the Vouni temples,¹¹ and from "the roof-tiles . . . decorated with meanders" mentioned at one of them.¹² But it is no less evident from the particular type of pan-tiles found at Marion, Kition and Soli. Such tiles were widespread in the Greek world, from Archaic times onwards.¹³ They seemingly appeared earlier in Ionia than in Greece proper, but the material available is hardly sufficient for any definite conclusions of that kind to be drawn.

It is, however, interesting to note another circumstance providing a more convincing, architectural link between western Asia Minor and Cyprus. The sole information given about the Archaic roof from Idalion is the fact that the pan-tiles were flat and the cover-tiles semi-cylindrical. This combination of the Corinthian and Laconian systems was used in three areas during the Archaic and Classical periods: Central Italy, Sicily/Magna Graecia and Ionia.¹⁴ If we do not choose to connect the Idalion system with Italy or see it as the result of a local development, it may indicate a connection between Cyprus and the Ionian Greeks.

In Cyprus, architectural terracottas did not play the important role they did in other hellenized areas, and the production, apparently, never developed into a free, creative industry. Still, the shapes and appearances of these terracottas may provide additional information concerning Cypriote architecture and, not least, the Greek influence on the island.

Acknowledgements: I would like to express my thanks to Mr. Kjell Andersson, of Göteborg, who first induced me to study the Marion tiles, and to Marie-Louise Winbladh, Curator of the Museum's Greek and Roman Department, for help with the field journals of the Swedish Cyprus Expedition.

¹ This is shown, for instance, by the palace at Vouni, where, as explicitly stated, not a single roof-tile fragment was found; see E. Gjerstad, in *The Swedish Cyprus Expedition. Finds and results of the excavations in Cyprus 1927–1931 (SCE)*, Vol. III (Stockholm 1937), p. 153.

² E. Gjerstad, in *SCE*, Vol. II (Stockholm 1935), pp. 490 and 530–531; *idem*, in *SCE*, Vol. IV:2 (Stockholm 1948), p. 6.

³ A. Westholm, in *SCE*, Vol. III, pp. 97, 98 no. 153 (three fragments), 100 no. 201, 101 no. 209 (six fragments), and 108, Pl. XLVII:14; E. Gjerstad, in *SCE*, Vol. IV:2, p. 16.

⁴ E. Gjerstad, in *SCE*, Vol. IV:2, p. 17.

⁵ A. Westholm, in *SCE*, Vol. III, pp. 296 and 298 no. 597, Pl. XCVIII:7.

⁶ A. Westholm, in *SCE*, Vol. III, p. 491.

⁷ E. Gjerstad, in *SCE*, Vol. III, pp. 562 and 573.

⁸ E. Gjerstad, in *SCE*, Vol. II, pp. 266–267, Figs. 101 and 105. While Niche 1 was closed with rubble, the publication gives the impression that tile fragments were found in the opening of Niche 2.

⁹ E. Gjerstad, in *SCE*, Vol. II, pp. 278–282.

¹⁰ J.-F. Salles, *Kition-Bamboula*, Vol. II, *Les égouts de la ville classique* (Paris 1983), pp. 110 and 112 nos. 391–395, Figs. 42–48. Cf. also the Roman Imperial pan-tiles published by I. Nicolaou, "A Hellenistic and Roman tomb at Eurychou-Phoenikas", *RDAC* 1984, p. 244, nos. 123–126, Pl. XLIX:159–162.

¹¹ This general type of antefix, decorated in relief with tall, nine-, eleven- or thirteen-petaled palmettes over double volutes, is extremely common all over Greece and Asia Minor from the late V century B.C. into Roman Imperial times; cf. I. Thallon Hill & L. S. King, *Corinth*, Vol. IV:1, *Decorated architectural terracottas* (Cambridge, Mass. 1929), pp. 14–16. However, there are few really close parallels to the Vouni antefixes. See, for instance, Å. Åkerström, *Die architektoni-*

schen Terrakotten Kleinasiens (Skrifter utgivna av Svenska Institutet i Athen, 4°, 11; Lund 1966), pp. 15 and 19–20, Taf. 6 (Assos); *Olympia. Die Ergebnisse der von dem deutschen Reich veranstalteten Ausgrabung*, herausgegeben von E. Curtius & F. Adler, Tafelband II (Berlin 1896), Taf. 123:4.

¹² Eaves-tiles decorated with painted meanders are found all over the Greek world in the Archaic period. Considering the date of the Paradisotissa temple and the combination with antefixes with plastic palmettes, it seems more probable, though, that these tiles were decorated with relief meanders – a variant in use from the IV century onwards. See, for instance, Å. Åkerström (*supra* n. 11), p. 2 nos. 1–2, Taf. 1:7–8 (Olbia); p. 15 nos. 3–4, Taf. 7:1 and 7:3 (Assos); p. 45 nos. 2–7, Taf. 17:4–5 (provenience unknown).

¹³ *Olympia*, Tafelband II (*supra* n. 11), Taf. 96:7–11, 13–15, 98:10, and 99:1–3,9; *Aegina. Das Heiligtum der Aphaia*, herausgegeben von A. Furtwängler (München 1906), p. 40, Abb. 12, Taf. 47 and 63; J. Travlos, *Bildlexikon zur Topographie des antiken Athen* (Tübingen 1971), Fig. 479; J. Chamondar, *Délos*, Vol. VIII:3, *Le quartier du théâtre. Étude sur l'habitation délienne à l'époque hellénistique* (Paris 1924), Figs. 196–197; D. M. Robinson & J. W. Graham, *Excavations at Olynthus*, Vol. VIII, *The Hellenic house* (Baltimore 1938), Fig. 17D; H. Koch, "Studien zu den campanischen Dachterracottas", *Röm. Mitt.* 30, 1915, pp. 25–26 no. 2b, Abb. 8 (Assos); Å. Åkerström (*supra* n. 11), p. 15, Abb. 5 (Assos), p. 46, Abb. 12:1–3 (Larisa), p. 98, Taf. 52:2 (Samos), p. 190, Abb. 63B (Boğhazköy); A. Ramage, *Lydian houses and architectural terracottas* (Archaeological exploration of Sardis, Monograph 5; Cambridge, Mass. 1978), pp. 35–36, Fig. 124; Th. Wiegand & H. Schrader, *Priene. Ergebnisse der Ausgrabungen und Untersuchungen in den Jahren 1895–1898* (Berlin 1904), pp. 306–307, Abb. 327 and 329.

¹⁴ Cf. Å. Åkerström (*supra* n. 11), pp. 197–198.

Style, Chemistry and Multivariate Statistics in the Classification of Some Etruscan Mirrors

Ingela M. B. Wiman

1. Introduction

1.1. Background. Until recently, Etruscan mirrors were considered mainly as *objets d'art* and many of them were kept in private collections and art dealers' shops before they found their way into museum display cases. Hence, many of them have no satisfactory scientific documentation. This fact is rather unfortunate, since few remains of the Etruscan culture can supply as much information about Etruscan concepts of art and insight into how the Greek myths were adapted and transformed¹ as their bronze mirrors. Moreover, if we could acquire further information about where, when, and how these mirrors were fabricated, our knowledge of trade routes, metallurgical know-how and changes in artistic ideas within the Etruscan culture, would be greatly improved.

A pioneer effort to classify the mirrors was made in the 19th century by the German classicist E. Gerhard.² In the 20th century, many valuable studies of the mirrors have been carried out.³ In 1973 an international scientific committee was formed for the purpose of publishing, if possible, all Etruscan mirrors in a *Corpus Speculorum Etruscorum (CSE)*.⁴

In the present paper, I discuss some methods of utilizing metal-analytical data and aim at integrating these methods with the traditional stylistic analyses, in an attempt to determine the production centres of the mirrors. The main issue in this study is complex and necessitates the use of several methods.

The structure of the paper is as follows: (1) the choice of a suitable classifying method is discussed; (2) the material is presented; (3) a short description of the data-processing is given; (4) the results of a basic cluster analysis are presented for a Danish collection; (5) an additional cluster analysis of a larger collection in Brus-

sels is presented for comparison; (6) stylistic criteria and the result of the stylistic analysis are given; (7) the location of a certain mirror-producing workshop is discussed and, finally, (8) the overall results are discussed and conclusions drawn.

1.2. Primary classification problems. One primary task in all archaeological work is to choose a relevant approach to the material. The number of mirrors known at present is too large (c. 3000)⁵ to enable any simple overview to be made. The mirrors vary in form and dimensions and, in particular, with respect to their engraved decorations. Much work consists of evaluating relative similarities or differences among the mirrors. Such evaluations should provide the basis for the classification.

There are two chief types of information available from the mirrors, and we may call them "hard" and "soft" data. The hard data consist of objective, quantitative information on matters such as form, mirror geometry, dimensions, and the composition of the bronze alloy used, in short, all the measurable characteristics of a mirror.⁶ Such characteristics may be useful, as they can reveal certain intentions of the manufacturer (such as deliberate optimization of copper/tin ratios) or because certain properties may give an opportunity to trace influences not necessarily "known" by the manufacturer himself (such as metal contamination, reflecting, for instance, original ore composition). Soft data, on the other hand, are more tenuous and concern the information inherent in the decoration. Although some soft data may be "measureable", in the sense that the height etc. of a motif can be assigned a numerical value, the "meaning" of a motif cannot. Such sources are often subject to misinterpretations, since the ultimate meanings of many symbols and iconographic

scenes may well be historically lost. Iconographic and stylistic interpretations basically rely on such soft data.

The ideal solution in every study of ancient artifacts would be to concentrate on the unambiguous hard data, but these data imply other kinds of uncertainties. For instance, if the bronze alloy of a mirror is analysed at all, is it analysed by the best available method? What distortion is caused by analytical errors? Are analyses made by different analysts compatible without careful intercalibration work? Does the method in question give information on all the significant elements in the alloy? Many of these problems are discussed at some length by Craddock⁷ and are not elaborated on here. In the fascicles of *CSE*⁸ published to date, and in the large collection of mirrors from the Royal Museum in Brussels,⁹ such analyses have been undertaken and are listed in appendices. Although, of course, such analytical data have been used to some extent for coarse classification purposes,¹⁰ one purpose of the present study is to determine how they can contribute further and in more detail to the primary classification of a mirror collection. The Danish fascicle was chosen for a first evaluation, since it contains descriptions of mirrors with a wide dating range and a well-documented, chemical analysis (atomic-absorption spectrophotometry, *AAS*) of 12 different chemical elements (gold was looked for as a 13th element but was not detected in any of the mirrors).

1.3. Mirror Metallurgy. The possibility of using chemical data for classification purposes essentially relates to the following issues: (i) whether the data can tell us anything about the basic ores and their origins (including the possible use of scrap bronzes) and (ii) whether the data can indicate controlled production technologies typical of various workshops and/or epochs. The Etruscan founders, famous among their contemporaries for their great metallurgical skill, used a tin bronze in the fabrication of their mirrors, as is demonstrated in Fig. 1. Although it is evident that there is a strong, negative correlation between the copper and tin distribution in the mirrors, close to the exact minus-one correlation expected in a binary alloy, it is likewise clear that impurities and/or deliberate components are non-negligible ingredients.

The analyses may thus tell us something of the type of crude metals used in the crucibles. The general ore-type can often be deduced from analysis of the alloy.¹¹ Quite likely, the copper originated in Etruria itself; from the sulphidic copper ores in the Colline Metallifer-

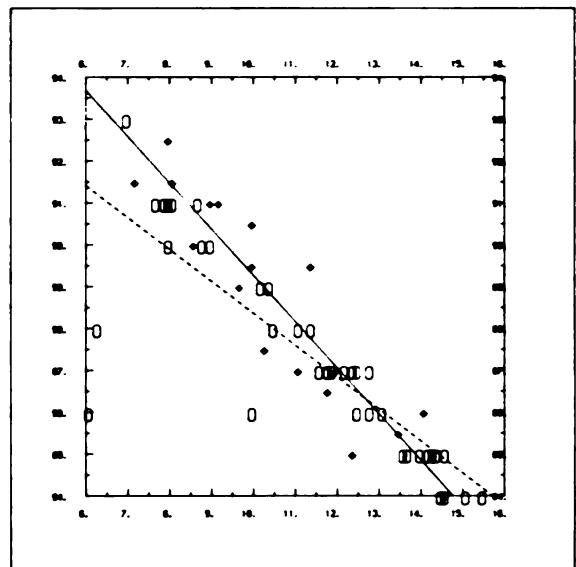


Fig. 1. Diagram giving the relationship between copper (Cu) and tin (Sn) concentrations in the Danish (symbol *) and Brussels (symbol o) collections. The correlation coefficient is $r = -0.9278$ for the Danish material and $r = -0.8554$ for the Brussels material. The solid and dashed lines are the regression lines for the Danish and the Brussels collections respectively.

vere and on Elba.¹² These ores belong to the type-III ores (*sensu* Bowman *et al.*),¹³ containing copper in the form of Cu_2S . The process by which copper is extracted from such sulphidic ores demands a two-step operation: (i) roasting, taking away the sulphur and replacing it with oxygen to form CuO ; (ii) fusing the ore with charcoal and some flux to form metallic Cu.¹⁴ Some traces of these processes may be expected in the final mirror. The principal impurities in copper ores are sulphur (S), oxygen (O) and iron (Fe), derived both from oxidized and from sulphidic ores.¹⁵ Of these, only Fe is generally documented in the results of analyses of Etruscan mirrors. Fluxes can introduce arsenic (As) and manganese (Mn) into the metal, but in complete roasting, ores lose a considerable amount of their more volatile impurities, such as As, antimony (Sb) and lead (Pb).¹⁶ All these metals are common trace elements, judging from the mirror analyses made in the *Corpus fascicles* published to date.¹⁷ High Sb and As levels are

typical of the fahlerz-type ores in Etruria.¹⁸ These trace elements are common in mirrors, strongly supporting the idea of Etruria itself as the origin of the copper metal. Type-III ores can be assumed to be the most advanced type of ore used in ancient societies.¹⁹ The use of such ore thus requires a certain degree of technical skill.

The next alloying element is tin (Sn). The origin of the tin sources is still debated²⁰ and is beyond the scope of this work. It will be sufficient to state that there are tin sources in Campiglia,²¹ and, according to Dennis, "a rich stratum of tin was discovered in the secondary limestone ... near Campiglia, with traces of ancient workings."²²

The ancient founders often used scrap bronze in their workshops. With the re-use of scrap bronze, lead concentrations must have been a problem if the alloy was to be processed to make a mirror. In repeated recycling of the bronze, some tin is oxidized and lost, and tin has to be added to re-establish the original composition.²³ These factors make it reasonable to assume that the Etruscan bronze-mirror founders, for their own convenience, used as much "clean", crude metal as possible and restricted the use of scrap to a minimum.

The founder had stronger reasons for controlling the alloy of a bronze mirror than most other products of his workshop. Etruscan bronzes in general have an average tin content of about 8.6 %.²⁴ Mirrors, however, have a higher average tin content of between 10 and 12 %.²⁵ A high percentage of tin increases the reflecting quality of a mirror but also its brittleness.²⁶ From a metallographic study of a small number of mirrors, Panseri and Leoni²⁷ concluded that the mirrors had been subjected to a final hammering process. In this case, too brittle an alloy must be avoided. Chemical analyses of Etruscan bronzes show that lead is often present in the alloy.²⁸ Lead decreases the melting-point of a bronze alloy, a circumstance which might have been desirable *per se*. However, lead does not melt homogeneously but forms globules on the surface, which decrease the reflecting quality.²⁹ Lead may also promote the formation of minute cracks on the engraved surface.³⁰ This must have been considered highly inappropriate in an object in which optimum reflecting quality and a surface ductile enough to stand the pressure of the graver's burin without forming cracks were desired.

In conclusion, the metal compositions of the mirrors can give valuable clues to the understanding of the metallurgical state-of-the-art in Etruria. However, it should be emphasized that, as yet, no perfect models

are available for the optimal handling of such hard data. For one thing, objects, such as mirrors, of about the same provenance and dating are likely to have about the same chemical composition.³¹ Another question, much more intricate and the main theme of this paper, is what conclusions can be drawn about provenance and dating as regards a group of mirrors statistically found to have similar chemical compositions? Differences in the composition of the alloys from various places in Etruria might be explained by the local availability and cost of the metals concerned.³² It is recognized that the result of chemical analyses alone cannot be taken as proof of any date or provenance, but, for complementing the stylistic or typological information provided by the mirror, with the characteristics of a completely different type, the potential contribution of "computerized" methods is far too important to be neglected.

1.4. Soft Data. Unlike the use of fairly recently available, chemical data, which so far has a short tradition, there is a long and well-established use of stylistic analysis of mirror engravings. The basic criteria used in such evaluations in this paper are given in section 6. In real life, there was, of course, no clear-cut difference between the various needs of the founder and the engraving master in their aims of making useful mirrors, easy to manufacture and sell. The artist demanded a mirror with a surface ductile enough to be furnished with engravings. The founder would like to have a word on the dimensions of the mirrors with respect to suitable alloy compositions. Thus, there is good reason to assume an intimate relationship between founder and engraver in the fabrication of a mirror.³³

2. Material

A basic, statistical analysis, using various clustering techniques, was carried out on the mirrors in the first fascicule of the *Corpus Speculorum Etruscorum* from Denmark.³⁴ This work has 26 catalogued items. Of these, mirrors with a tang or a handle cast in one piece with the mirror were selected for closer study. All covered mirrors, or parts of them, and all separately made handles were excluded, as they have a different metal composition. Separate handles generally contain more lead.³⁵ Covered mirrors were often coated with a high-tin alloy in order to increase their reflecting qual-

Table 1. Mirrors from CSE: Denmark 1 investigated in this study. Letter refer to the first two letters of the presumed find place: VU = Vulci and Piansano, TA = Tarquinia and OR = Orvieto.³⁷ Most of the mirrors did not have known proveniences, UN = unknown.

Cat.no. 1 corresponds to VU01	Cat.no. 14 corresponds to UN14
Cat.no. 2 corresponds to VU02	Cat.no. 16 corresponds to UN16
Cat.no. 3 corresponds to VU03	Cat.no. 19 corresponds to UN19
Cat.no. 5 corresponds to UN05	Cat.no. 20 corresponds to UN20
Cat.no. 6 corresponds to UN06	Cat.no. 21 corresponds to TA21
Cat.no. 7 corresponds to UN07	Cat.no. 22 corresponds to VU22
Cat.no. 10 corresponds to UN10	Cat.no. 23 corresponds to UN23
Cat.no. 11 corresponds to UN11	Cat.no. 25 corresponds to OR25
Cat.no. 12 corresponds to UN12	Cat.no. 26 corresponds to UN26
Cat.no. 13 corresponds to UN13	

ity.³⁶ One mirror, cat no. 15, lacked analytical data. See Table 1.

The material is limited – only 19 mirrors were suitable for the treatment described below – but this limitation can be useful in the primary evaluation of a method.

Table 2. Mirrors from the Royal Museum in Brussels used in this work. The letters refer to the first two letters of the presumed find place: BO = Bolsena, CA = Caere, CH = Chiusi, OR = Orvieto, PR = Praeneste, TA = Tarquinia (Corneto), TU = Tuscania, VI = Viterbo, VU = Vulci and UN = unknown, followed by their catalogue numbers given in Lambrechts' publication (cf. note 9).

Cat.no. 1 in this study PR01	Cat.no. 40 in this study PR40
Cat.no. 2 in this study CA02	Cat.no. 41 in this study TA41
Cat.no. 3 in this study PR03	Cat.no. 42 in this study UN42
Cat.no. 4 in this study TA04	Cat.no. 43 in this study VU43
Cat.no. 5 in this study UN05	Cat.no. 44 in this study TU44
Cat.no. 7 in this study UN07	Cat.no. 45 in this study CH45
Cat.no. 8 in this study PR08	Cat.no. 46 in this study BO46
Cat.no. 13 in this study UN13	Cat.no. 47 in this study BO47
Cat.no. 20 in this study VI20	Cat.no. 48 in this study PR48
Cat.no. 22 in this study VI22	Cat.no. 49 in this study OR49
Cat.no. 23 in this study UN23	Cat.no. 50 in this study VI50
Cat.no. 24 in this study PR24	Cat.no. 51 in this study VI51
Cat.no. 25 in this study BO25	Cat.no. 52 in this study CH52
Cat.no. 26 in this study CH26	Cat.no. 53 in this study VO53
Cat.no. 30 in this study BO30	Cat.no. 54 in this study OR54
Cat.no. 31 in this study BO31	Cat.no. 66 in this study UN66
Cat.no. 32 in this study TA32	Cat.no. 67 in this study UN67
Cat.no. 33 in this study UN33	Cat.no. 68 in this study UN68
Cat.no. 36 in this study PR36	Cat.no. 69 in this study UN69
Cat.no. 38 in this study VI38	Cat.no. 70 in this study UN70
Cat.no. 39 in this study VI39	Cat.no. 71 in this study UN71

An analysis of the Brussels mirrors³⁸ was added to the material and used as a control cluster and in diagrams of various kinds in this paper (see Table 2).

3. Methods

The Danish mirrors provide 19×12 data points (19 mirrors with 12 elements each) (see Table 3, raw data); the Brussels mirrors contain 42×8 data points (Table 4). However limited, the amount of information is large enough to necessitate some kind of statistical treatment. Multivariate statistics in archaeology are discussed by Doran and Hodson, and Orton.³⁹ Some essential considerations entering into classification by statistical methods are discussed by Nie *et al.*⁴⁰ and Wishart.⁴¹ For the present study, clustering techniques based on dendrogram evaluation and factor analysis were chosen.

One matter that must be decided is whether data about mirror elements should be standardized or not.

Table 3. The chemical composition of the mirrors from CSE, Denmark 1, based on Craddock. Concentration values in % of weight. Notation (VU01–UN26) defined in Table 1. Zero concentration values here indicate data below detection limits.

	Mn	Fe	Ni	Cu	Zn	As	Ag	Sn	Sb	Pb	Bi	Co
VU01	.003	.09	.03	86.5	.05	.26	.03	11.8	.05	.22	.007	.090
VU02	.000	.06	.00	87.0	.05	.05	.04	12.0	.08	.10	.000	.000
VU03	.010	.08	.05	90.5	.00	.18	.03	10.0	.04	.10	.010	.010
UN05	.000	.32	.03	90.0	.02	.35	.02	8.6	.03	.04	.003	.060
UN06	.000	.03	.05	89.5	.01	.14	.04	11.4	.04	.09	.009	.050
UN07	.000	.14	.04	89.0	.02	.14	.02	9.7	.02	.09	.010	.040
UN10	.000	.20	.03	91.0	.00	.15	.03	9.2	.04	.13	.008	.000
UN11	.000	.15	.02	87.5	.01	.32	.01	10.3	.04	.05	.010	.170
UN12	.004	.16	.04	91.5	.03	.11	.02	7.2	.02	.06	.010	.040
UN13	.000	.09	.04	85.0	.02	.40	.05	12.4	.06	1.30	.010	.000
UN14	.010	.13	.05	92.5	.00	.25	.03	8.0	.04	.34	.010	.001
UN16	.005	.25	.03	91.5	.03	.40	.04	8.1	.04	.09	.004	.050
UN19	.000	.07	.015	84.0	.00	.07	1.00	14.6	.02	.00	.010	.150
UN20	.002	.46	.03	85.5	.45	.25	.03	13.5	.03	.60	.010	.020
TA21	.005	.25	.05	87.0	.01	.15	.02	11.1	.02	.09	.008	.070
VU22	.030	.12	.04	91.5	.00	.48	.03	8.1	.06	.10	.004	.000
UN23	.000	.07	.05	91.0	.01	.17	.02	9.0	.02	.02	.010	.000
OR25	.000	.07	.03	89.5	.02	.17	.03	10.0	.005	.12	.003	.060
UN26	.000	.20	.02	86.0	.00	.06	.02	14.1	.01	.03	.002	.007

Table 4. A list of the chemical elements in the Brussels collection, based on Maes, in Lambrechts (*supra*, n.9) (concentration values in % by weight). Notation PR01-UN71 defined in Table 2.

	Cu	Sn	Pb	As	Ni	Fe	Co	Zn
PR01	87.0	12.2	.15	.31	.10	.18	.12	.04
CA02	91.0	8.0	.06	.03	.07	.18	.18	.06
PR03	89.0	10.2	.18	.46	.11	.14	.10	.01
TA04	85.0	14.6	.27	.07	.11	.19	.06	.02
UN05	89.0	10.2	.10	.06	.13	.22	.06	.03
UN07	91.0	7.7	.09	.43	.11	.24	.06	.03
PR08	86.0	12.5	.12	.33	.15	.28	.30	.16
UN13	90.0	8.8	.51	.21	.12	.20	.03	.04
VI20	88.0	11.4	.15	.19	.09	.34	.06	.16
VI22	88.0	10.5	.14	.33	.11	.37	.13	.06
UN23	85.0	13.7	.11	.02	.07	.95	.50	.01
PR24	86.0	12.8	.48	.11	.10	.30	.09	.03
BO25	86.0	13.1	.75	.05	.12	.31	.06	.04
CH26	91.0	8.7	.09	.02	.09	.39	.10	.02
BO30	90.0	9.0	.22	.06	.02	.05	.44	.02
BO31	87.0	11.9	.25	.14	.14	.39	.18	.06
TA32	87.0	11.8	.31	.31	.02	.16	.02	.02
UN33	87.0	11.6	.15	.11	.04	.46	.33	.07
PR36	88.0	6.3	4.83	.16	.05	.16	.07	.02
VI38	88.0	11.1	.17	.14	.06	.39	.20	.05
VI39	85.0	14.3	.32	.09	.04	.17	.09	.02
PR40	85.0	13.6	.53	.46	.06	.01	.11	.02
TA41	84.0	15.1	.17	.08	.04	.33	.06	.02
UN42	87.0	12.5	.08	.33	.07	.01	.11	.02
VU43	84.0	15.5	.40	.28	.05	.06	.07	.02
TU44	84.0	14.6	.35	.48	.06	.07	.13	.02
CH45	85.0	14.0	.84	.22	.05	.21	.06	.02
BO46	90.0	8.0	1.26	.27	.07	.21	.06	.01
BO47	87.0	12.4	.15	.17	.05	.19	.27	.02
PR48	85.0	14.4	.12	.19	.05	.15	.48	.02
OR49	85.0	14.2	.52	.26	.06	.31	.16	.02
VI50	85.0	14.6	.02	.13	.05	.17	.08	.02
VI51	84.0	15.5	.04	.36	.06	.06	.01	.02
CH52	93.0	7.0	.05	.29	.02	.05	.09	.02
VO53	86.0	6.1	7.40	.25	.03	.05	.02	.02
OR54	87.0	12.8	.02	.11	.04	.19	.14	.02
UN66	85.0	14.0	.57	.45	.07	.12	.11	.01
UN67	91.0	7.9	.33	.13	.11	.27	.06	.03
UN68	89.0	10.4	.07	.15	.02	.13	.05	.03
UN69	86.0	10.0	3.42	.05	.08	.01	.15	.02
UN70	91.0	8.1	.20	.13	.16	.23	.03	.04
UN71	84.0	14.5	1.00	.34	.01	.01	.01	.02

The chemical elements in the Danish mirrors can be divided roughly into three classes with respect to concentration levels: (a) the major components (Cu, Sn), (b) an intermediate group in which the elements normally account for around 0.2 % of the total composition (As, Pb, Fe), and (c) trace elements, normally around 0.08–0.01 % (Ni, Zn, Sb, Ag, Co, Mn, Bi). It seems reasonable to assume that the Etruscans used fairly pure, crude metals (cf. section 1.3). Since trace elements might be indicators of different metallurgical traditions as to which fluxes and roasting procedures to use,⁴² it was considered important to incorporate all the analysed chemical elements in the basic matrix. However, a bronze alloy is by definition an alloy of copper and tin. These are the only elements that we know were intended to form the bulk of the alloy. Therefore, concentrations of elements should enter into the similarity analysis with their proper, unnormalized values. (Standardization may, however, be valuable for certain other uses of analytical data, where elements are assigned equal importance, for example, in a quest for important indicators of certain ores.)

The next matter to be considered is the choice of a similarity index. Squared Euclidean distances (SED) have been discussed by Doran and Hodson in the analyses of archaeological material⁴³ and are typically used in introductory studies in preference to much more complex indices (cf. also Wishart).⁴⁴ SED are chosen here and applied to form a primary difference matrix. For a pilot study, this matrix was transformed into a similarity matrix suitable for factor analysis by converting the distances to the range 0 (minimum similarity) to +1 (complete similarity, zero difference). This similarity matrix was entered in a SPSS factor-analysis routine,⁴⁵ providing the base for a primary factor analysis. Later on, an updated version of the cluster-analytical package “Clustan”⁴⁶ became available and was used for final dendrogram and factor analysis. The result of the Clustan analysis essentially confirmed the SPSS runs and is shown in Figs. 3 and 4 (see also dendrogram Fig. 2). It should be stressed, as has been done by Doran and Hodson,⁴⁷ that there are few, if any, classifying methods that can provide unique and unambiguous results, because artificial representations of the data in any multivariate analysis entail a loss of detailed information.⁴⁸ On the other hand, this is compensated for by a more effective overview. This simplified approach for sorting relevant information out of a large amount of data encouraged, among other things, further interest in potential stylistic connections.

4. Clustering Tendencies in the Mirrors of the Danish collection

As can be seen in Figs. 2, 3 and 4, the mirrors clustered in four different groups. In these diagrams, the mirrors in cluster-group 4 – although forming a cluster – show a relatively wide distance between the different members of the group. In fact, mirror UN19 stands out almost as a solitary one ("outlier"). This is partly due to the high silver content of the mirror (1 %, as compared with the average Ag content of around 0.08 %).⁴⁹ Though, in this particular data set, this Ag distinction can hardly remain unnoticed even without a factor analysis, it does illustrate the way factor analysis identifies "odd" data. (It goes without saying that visual inspection of, say, 2000 concentration data instead of 228 data, as in this case, would not successfully identify outliers and families.) As shown by the "nearest-neighbour line", UN19 is closest to UN20, a mirror of the same general typology.⁵⁰ Of the other three mirrors in the group, UN26 is very unlike the others, both in form, dimensions and stylistic traits. The reason why it has been connected with the other group members is the rather high tin content (14.1 %), a feature possibly more characteristic of the smaller mirrors UN19, UN20 and UN13 (see discussion, p. 24) in cluster-group 4. In accordance with the typology of mirrors with a handle cast in one piece, recently established by Emmanuel-Rebuffat, UN20 and

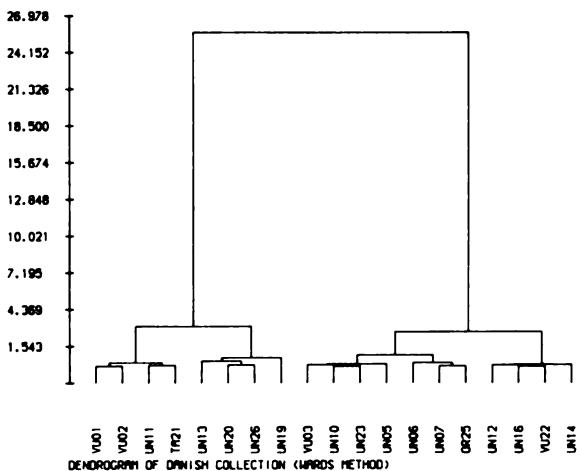


Fig. 2, Dendrogram of the Danish mirrors based on hierachic fusion (Ward's method). The numbers of the mirrors (cf. Table 1) are given on the horizontal axes. The vertical axis represents a measure of the dispersion among the objects fused into a given group.

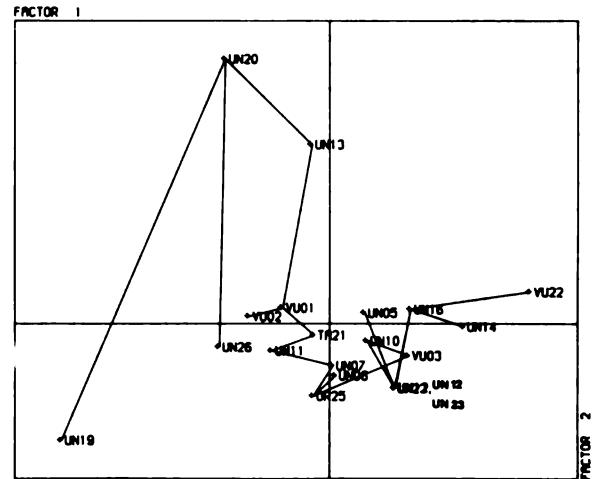


Fig. 3, The result of a factor analysis, based on squared Euclidean distances among the Danish mirrors. The linkages connect the mirrors according to Fig. 2 ("nearest neighbours"). Mirrors UN20 and UN26 are thus more closely related than are mirrors UN26 and VU02, although the positions of the latter in the diagram seem to be closer. Factor axis 1 (2) accounts for 28.87 % (18.68 %) of the total variance.

UN13 have been placed in two different typological groups.⁵¹

One group was formed by the mirrors VU02, VU01, UN11 and TA21. The mirrors in this group, though closer to each other, are also related to the mirrors in group 4, as can be appreciated both by the larger circle

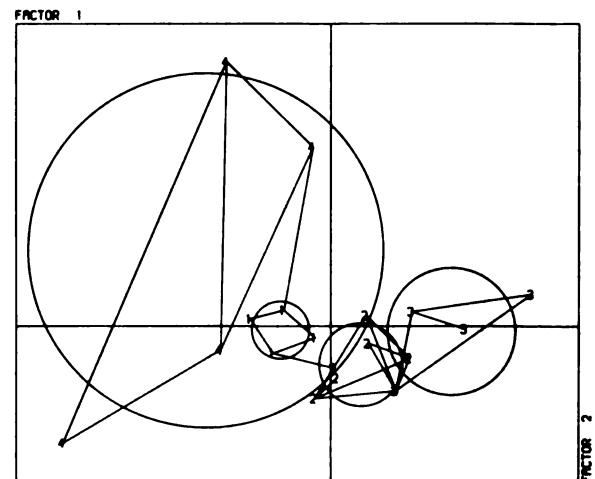


Fig. 4, Cluster diagram with intra- and inter-cluster linkages shown. The mirrors are labelled here with the number of the cluster to which they belong.

surrounding the two cluster-groups and by the link between VU01 and UN13. This connection is most interesting, since Emmanuel-Rebuffat places these two mirrors in the same group.⁵² The mirrors VU01 and 02 have the same provenance ("tomb at Vulci"). Although their datings differ widely (VU01 is dated to the 2nd century B.C., VU02 to c. 470 B.C.), they could, theoretically, have been made in the same manufacturing tradition, as metallurgical processes in a workshop may well have been handed down from generation to generation (see section 8). UN11 and TA21 are very close in their metal compositions and are both relatively late mirrors with handles cast in one piece with the disc. Iconographically and stylistically, they are not especially close to each other. VU01 and UN11, on the other hand, have something in common. The mirror handles are in both cases terminated by a hind's head. UN11 is an extremely beautiful and carefully made mirror, somewhat older than VU01, Vulci has been identified as a city where mirrors were fabricated for several centuries.⁵³ A common production centre (albeit not the same workshop, see section 7 for further details), possibly Vulci, may be suggested as the origin of the three mirrors VU01, VU02 and UN11.

The mirror TA21 is placed in the same typological group as UN06,⁵⁴ and their mutual likeness is considerable, since they both belong to the "Kranzspiegelgruppe" or "Spiky Garland Group".⁵⁵ Contrary to what could be expected, these two mirrors did not cluster together.

Again we see in this cluster three relatively late mirrors VU01, UN11 and TA21 (characterized by a fairly stable copper content, 86.5–87.5 %, and a tin value of 11.8–10.3 %), combined with an archaic mirror, VU02, c. 470 B.C. (with the same copper percentage, 87.0 %, and a tin value of 12 %). Sometimes chronological discrepancies within a cluster-group may indicate a common production centre (see sections 1.3 and 8 for further details).

Cluster-group 3 contains four mirrors: UN16, UN14, UN12 and UN22. All the mirrors are tang mirrors and, except for UN22, an archaic mirror (c. 470–450 B.C.), fairly contemporary. UN16 and UN14 are chemically closest, both with a small central cavity⁵⁶ and an unusually low tin value (8.0 and 8.1 % respectively). This low tin percentage applies also to UN12 (7.2 %). This combines them with VU22, an archaic mirror with a tin value of 8.1 %, a value often found in larger mirrors (see section 8). VU22 was found in Piansano, close to Vulci; judging by the Fischer-Graf⁵⁷ stylistic criteria, it

was certainly made in Vulci. These four tang mirrors may well have been made in the same metallurgical tradition, VU22 and UN16 possibly in the same production centre – Vulci – as suggested by the very similar metal compositions of these two mirrors (see Table 3 and section 8). They have some other traits in common, such as tapering talons and tangs, the obverse decoration of the talons, and the carefully made "voluted palmette" of VU22, as echoed in the more simple decoration of UN16. Considering that Vulci has provided many mirrors, the conclusion that five mirrors out of a total of 19 may have been fabricated in workshops there is not surprising.

Cluster group 2 yielded the most interesting result. This cluster was also the largest one, combining seven mirrors in a closely joined group: UN07, OR25, UN06, VU03, UN10, UN23 and UN05. All these mirrors show similarities with respect to metal composition and some of them have stylistic affinities as well. A quite new group of mirrors, probably made in a common workshop, is suggested below (section 6). The best available method of testing the validity of this hypothesis is to employ detailed stylistic comparisons; to avoid unnecessarily complicated discussions, the mirrors should be as close in date as possible (see section 7.1). Therefore, the mirrors VU03 (c. 460 B.C.) and UN10 (c. 450 B.C.), which are older than the other group members by about 150 years, are excluded from the present discussion, as well as UN06 (a "Kranzspiegel" of debatable ancestry).⁵⁸ UN06, however, will be discussed in a later context (section 8). Before entering upon the description of the workshop in question, the clustering tendencies in the Brussels collection will be investigated.

5. An Additional Analysis of Mirrors in the Brussels Collection

The metal compositions of the Brussels mirrors have been analysed, using the X-ray fluorescence method. Eight chemical elements were looked for. As in the Danish material, all covered mirrors and single handles were omitted from the statistical treatment. The metal compositions and clustering tendencies in the piroformed mirrors will be treated elsewhere.⁵⁹ Further, all underdecorated mirrors are excluded, as they cannot be used when stylistic comparisons are to be made. The miniature mirror (cat. no. 37) cannot be judged as a

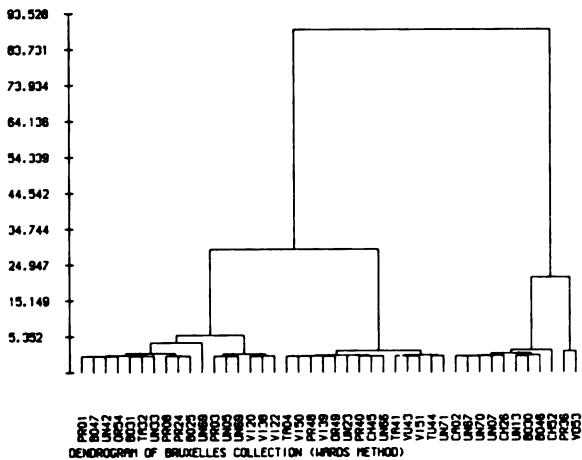


Fig. 5. Dendrogram of the Brussels mirrors based on hierachic fusion (Ward's method). The numbers of the mirrors (cf. Table 2) are given on the horizontal axis. Vertical axis as in Fig. 2.

typical Etruscan mirror and was also omitted. A list of mirrors to be cluster-analysed is given in Table 2. The cluster analysis yielded the dendrogram seen in Fig. 5 and the cluster diagram in Fig. 6.

The dendrogram (Fig. 5) shows two main groups of mirrors. The first group is the largest one, containing three subgroups; clusters nos. 1, 3 and 4. At a far distance from these are the mirrors in cluster no. 2, the two outliers in cluster no 5 and the single mirror forming cluster no. 6. Fairly soon, clusters nos 1 and 3, and the outlier forming cluster no. 7, are separated from the large and rather homogeneous sub-cluster no. 4. Of the seven sub-clusters, nos. 1, 7 and 3, on the one hand, and nos. 2 and 6, on the other, are the two main groups of mirrors with the mutually greatest chemical similarities. Two mirrors were "outliers", each forming a "cluster-group" of its own; UN69 (high lead value 3.42 %) and CH52 (highest copper value of all the mirrors in the collection, 93 %). Outliers were also PR36 and VO53 in cluster no. 5 with unusually low tin values (6.1 % and 6.3 %) and high lead values (4.83 % and 7.40 %). These high lead values should be treated with some caution, as it has been stated above (section 1.3) that lead is inhomogeneous, forming small globules in the bronze. The following mirrors are presented as in the sequence of the dendrogram (Fig. 5). The datings are those given by Lambrechts.

Cluster-group no. 1 might be subdivided into two, 1a and 1b:

19

Subgroup 1a turned out to contain two of the mirrors (BO31 and OR54), with stylistical similarities suggesting the same workshop as was indicated in the Danish material (see section 6 below).

PR01 Praeneste, 4-figure composition, 3rd century B.C.

BO47 Bolsena area, 3-fig. comp., end of 4th century B.C.

UN42 Unknown, Dioscouroi comp., 3rd century B.C.

OR54 Orvieto, Lasa, end of 4th century B.C.

BO31 Bolsena area, 3-fig. comp., 4th century B.C.

TA32 Corneto. Scylla, not far from 300 B.C.

UN33 Unknown. Nereid. end of 4th century B.C.

1b

PR08 Praeneste, 4-fig. comp., end of 4th century B.C.

PR24 Praeneste, 4-fig. comp., 3rd century B.C.

BO25 Bolsena area, 4-fig. comp., beginning of 3rd century BC

The small cluster no. 3 is closest to cluster no. 1, placed beside it in the dendrogram. It is also subdivided into two, 3a and 3b:

30

PR03 Praeneste. 4-fig. comp., beginning of 3rd century B.C.

UN05 Unknown, Gorgoneion, 5th century B.C.?

UN68 Unknown, Dioskuroi comp., 3rd century B.C.

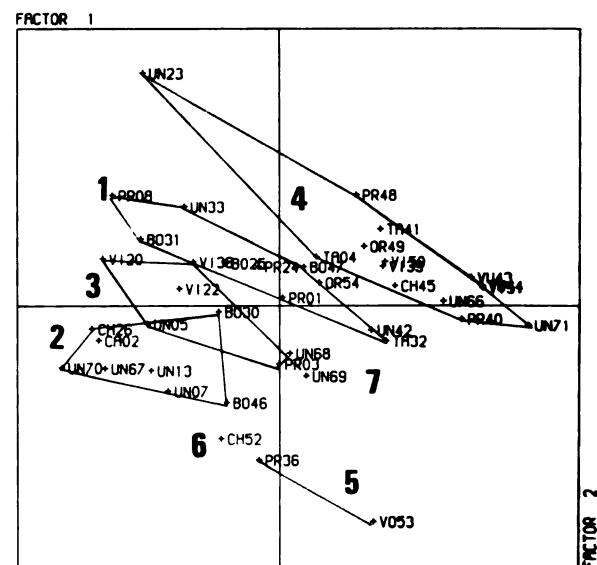


Fig. 6. Cluster diagram of the Brussels material (factor analysis based on the squared Euclidean distances). The gemometrical figures span each cluster of mirrors. Factor axis 1 (2) accounts for 26.66 % (24.76 %) of the total variance.

3b

VI20 Viterbo, 2-fig. comp., c. 470 B.C.

VI38 Viterbo, 4-fig. comp., beginning of 3rd century B.C.

VI22 Viterbo, 4-fig. comp., beginning of 3rd century B.C.

The most extensiv cluster, no. 4, contained only late mirrors with handles cast in one piece with the disc. It was also divided into two subgroups, 4a and 4b:

4a (13.6–14.6 % tin)

TA04 4-fig. comp., beginning of 3rd century B.C.

VI50 Viterbo, Lasa, 3rd century B.C.

PR48 Praeneste, Lasa, 3rd century B.C.

VI39 Viterbo, 3-fig. comp. 3rd century B.C.

OR49 Orvieto, Lasa, 3rd century B.C.

UN23 Unknown, 4-fig. comp., end of 4th century B.C.

PR40 Praeneste, Dioskouroi comp., 3rd century B.C.

CH45 Chiusi, Disokouroi comp., 3rd century B.C.

UN66 Unknown, dioskouroi comp., 3rd century B.C.

4b (it turns out that this subgroup contains mirrors with very high tin values, 14.6–15.5 %)

TA41 Tarquinia, Dioskouroi comp., 3rd century B.C.

VU43 Vulci, Dioskouroi comp., 3rd century B.C.

VI51 Viterbo, Lasa, 3rd century B.C.

TU44 Tuscania, Dioskouroi comp., 3rd century B.C.

UN71 Unknown, Dioskouroi comp., 3rd century B.C.

Cluster no. 2, finally, again provided two subgroups, 2a and 2b. The mirrors in this group are characterized by a low tin value.

2a

CA02 Caere, 2-fig. comp., around 300 B.C.

UN67 Unknown, 2-fig. comp., around 300 B.C.

UN70 Unknown, 2-fig. comp., around 300 B.C.

UN07 Unknown, 3-fig. comp., last quarter of 4th century B.C.

CH26 Chiusi, 4-fig. comp., 3rd century B.C.

2b

UN13 Unknown, 3-fig. comp., around 300 B.C.

BO30 Bolsena, 3-fig. comp., 4th century B.C.

BO46 Bolsena area, 2-fig. comp., around 300 B.C.

Since two mirrors attributed to the workshop to be discussed in the next section (cat. no. 31, mirror TLW 6, and cat. no. 54, Lasa 2) clustered together, there is support of the clustering tendencies in the limited Danish material beeing non-incidental.

6. Stylistical Similarities

Following the above analysis on a statistical and chemical basis, it will now be of interest to detail the “soft” characteristics of the selected mirrors. The following criteria were used as a basis for the assessment of stylistical similarity:

- (i) Form and dimensions
- (ii) Surrounding decorative garlands.
- (iii) Decorative elements of the reflecting (obverse) and non-reflecting (reverse) side at the extensions at the bases of mirror discs (talons).
- (iv) Certain decorative, filling ornaments.
- (v) Certain styles in the rendering of armour, clothes, jewellery and shoes.
- (vi) Certain styles in the redering of anatomical details.
- (vii) Compositional traits.

Mirrors supposed to have been manufactured in a common workshop during a certain epoch should have considerable likenesses in forms and dimensions. Mirrors of the fourth century were probably cast in refractory clay moulds⁶⁰ and not in stone moulds, which may explain why there are not many mirrors identical in dimensions from this century. The figurative scenes engraved on the mirrors were often copied from Greek vases and, even if transformed to suit Etruscan taste, the basic iconography was taken from Greek art.⁶¹ The use of different, decorative elements applied in the surrounding garlands and the minor infill ornaments may be characteristic of an individual, Etruscan, production centre. The types of ivy-leaf wreaths surrounding the main scene were, together with their great dependence on Greek vase paintings, the basic criteria by which Fischer-Graf distinguished a group of mirrors and attributed them to a production centre at Vulci.⁶²

The use of similar decorative elements on different mirrors is the most obvious criterion of a common workshop. The dress, jewellery, armour and shoes worn by the individuals in Etruscan mirror scenes are dependent on current fashions, as has been demonstrated by Bonfante.⁶³ Although the fashions of the time might be presumed to be the same in all Etruscan cities during a given period, artists in different cities are likely to have developed their own artistic styles in the rendering of specific details. The same assumption holds good for the rendering of anatomical details.

The four mirrors chosen for their chemical and stylistical likenesses can be placed in two groups on the basis of their motifs: (i) the mirrors UN05 and OR25, each

with two-figure scenes, and (ii) the mirrors UN07 and UN23, both depicting a "Lasa".

By a strict application of the given criteria of similarity to all the mirrors in the Brussels collection⁶⁴ and to the mirrors published by Gerhard,⁶⁵ further mirrors could be assigned to each group. During field work in the museums of Tarquinia and Orvieto in July 1984, I identified nos. 2 and 3⁶⁶ and no. 5⁶⁷. These two groups will be referred to as "the three-leaved wreath group" and "the Lasa group", respectively.

6.1. The three-leaved wreath group (TLW group). This group consists of the following mirrors:

1. Apollo and Goddess (Turan?). fig. 7.
The Ny Carlsberg Glyptothek. Inv. no. H 244 (H. I. N. 473).
Prov.: Orvieto (?).
Diam.: 153 mm.
2. God (Apollo) and youth. Fig. 8.
Tarquinia Museum R.C. 6332
Prov.: Tarquinia.
Diam.: 153 mm.
3. Male (satyr?) and Goddess (Turan?). Fig. 9.
Collezione Faina, Orvieto. Inv. no. 472/1499.
Prov.: Orvieto.
Diam.: 175 mm.
4. Warrior and Youth (Turms?). Fig. 10.
The Danish National Museum. Inv. no. ABA 561.
Prov.: Unknown.
Diam.: 162 mm.
5. Two warriors. Fig. 11.
Tarquinia Museum. No inventory number.
Prov.: Tarquinia.
Diam.: 172 mm.
6. Three warriors. Fig. 12.
Bruxelles Musées Royaux d'Art et d'Histoire à Bruxelles.
Inv. no. R1281 (832b)
Prov.: Area of Bolsena.
Diam.: 173.2 mm.

A stylistic analysis yields the following results: The directions "left" and "right" are as seen from the viewer's standpoint.

I. All six mirrors are circular and have long, spatula-shaped tangs. Two mirrors (nos. 1 and 2) have identical diameters of 153 mm. Mirrors nos. 3, 5 and 6 are larger,

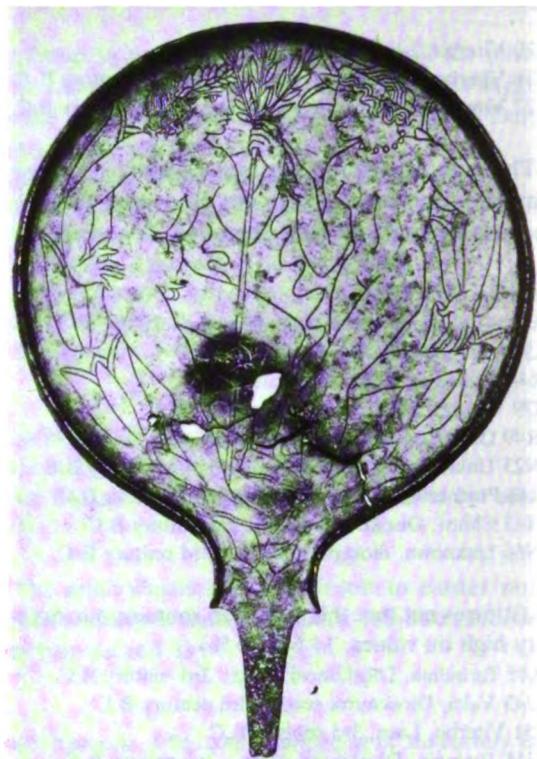


Fig. 7. Mirror TLW, no. 1, CSE, Denmark 1, cat. no. 25.



Fig. 8. Mirror TLW, no 2, ES V, 129:1.

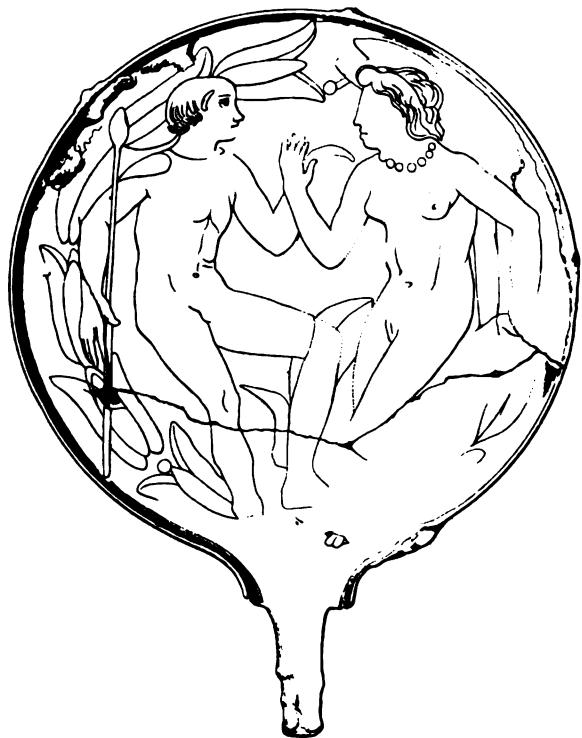


Fig. 9, Mirror TLW, no. 3, *ES V*, 40:2.



Fig. 11, Mirror TLW, no. 5. Tarquinia Museum.

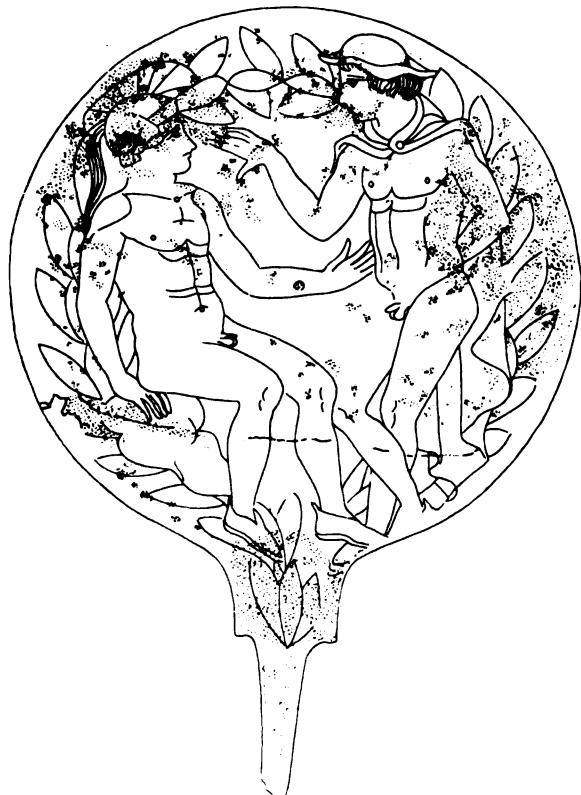


Fig. 10, Mirror TLW, no. 4. *CSE*, Denmark 1, cat. no. 5.



Fig. 12, Mirror TLW, no. 6. Brussels, Lambrechts' cat. no. 31.

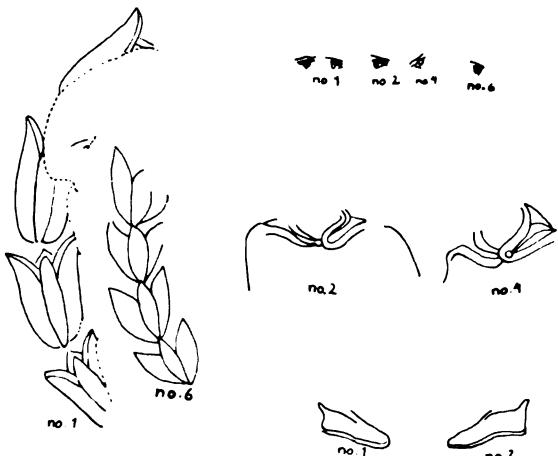


Fig. 13, Some detailed, stylistic traits in the TLW group. Numbers refer to the TLW-group numbering.

(175, 172 and 173.5 mm diameters, respectively). No. 4 has a diameter in between the others (162 mm). All the mirrors are close in size: the difference between the largest and smallest is 22 mm.⁶⁸

II. The main scene on all six mirrors is surrounded by a decorative wreath. All the individuals in the main scenes cut into and overlap parts of the decorative wreaths. These decorative wreaths consist, in four cases (nos. 2, 4, 5 and 6) of a branch of leaves set in groups of three (see Fig. 13). The branches rise from the talons and meet in the upper right or left part of the mirror disc. Thus they are not symmetrically equal in length. In two cases, the leaves of this decorative wreath are elongated and formed into a lily flower (mirrors nos. 1 and 3) (cf. Fig. 13). A similar flower decorates the exergue in mirror no. 6, where a three-leaved wreath encircles the main design.

III. All the mirrors of the group, except no. 5, whose very corroded surface conceals the decoration, have a palmette pattern rising from a single or a double volute on the talon of the observe of the mirrors. These mirrors also have a beaded border. Three mirrors (nos. 2, 4 and 5) have a three-leaved pattern on the reverse talons; no. 6 has a lily flower and no. 1 a double lotus pattern. Corrosion products conceal the possible decoration of the talon of no. 3.

IV. The almost total absence of any filling ornaments is common to the group. On mirror no. 1, there are two

wavy lines between and behind the divinities. On mirror no. 3, there is a lily pattern behind the legs of the satyr.

V. All the individuals on the mirrors who wear shoes (nos. 1, 2, 4, 5 and 6) have close-fitting ones with a triangular opening, soles carved with double lines and high back flaps (cf. Fig. 13). Three of the males wear the same type of mantle (chlamys), (those in nos. 2, 4 and 5). They are fastened at the throat with a button (cf. Fig. 13) and fall behind in heavy folds. On mirror no. 5, no lines indicate the ends of the mantles. One mirror (no. 2) shows a man wrapped in his himation.

The sitting figure on no. 4 and the middle warrior on no. 6 have helmets with crests and plumes. The cheek pieces are upturned. The neck protector of the helmet on no. 6 is larger than the one on no. 4; otherwise the types are alike. The seated warriors on nos. 5 and 6 wear similar helmets. The cuirass worn by the warrior on the right of mirror no. 6 is similar to those of the warriors on mirror no. 5.

The women on nos. 1 and 3 are wearing the same stiff, metallic, triangular diadem and both have similar pearls around their necks.

The laurel wreaths around the heads of the divinities on the left-hand side of mirrors nos. 1 and 2 are identical.

VI. The anatomical details are similar on all six mirrors, but slight differences are discernible. The eyes are indicated by three or four straight lines and an oval iris (see Fig. 13). The knee is indicated by a { -shaped contour on all mirrors. The lines that mark the muscles on the uncovered parts of the bodies are rendered with scrupulous care. On nos. 1 and 2, finely pointed lines mark the outlines of muscles and other anatomical details, such as ribs and clavicles. The same technique marks the ribs of the muscle cuirass of the warrior seated on the right on no. 6. The finer details are not so clearly visible on no. 3, where only the deeper lines and some outer contours are discernible under the corrosion products.

The thumbs have the same shapes on nos. 1, 2 and 3. The forms of the hands holding a spear and a laurel tree on nos. 1 and 2 respectively are identical.

Nipples are rendered by a simple ring.

The right shoulder of the satyr on no. 3 has the same strange drop-shape as is seen in the seated warrior on no. 4.

Three of the individuals in the group have wings, the mantle-wrapped Apollo on no. 2 and both warriors on

no. 5. The wings are alike, with a careful rendering of the smaller feathers of the upper halves of the wings and long, downward-hanging wing-feathers.

VII. The compositions of all six mirrors are alike. The poses and positions are similar in nos. 1, 2, and 3. The same mistake in the foreshortening of the outstretched leg is found on all the seated figures of these mirrors. The woman on no. 1 has exactly the same pose as the woman on no. 3. In five of the mirrors (all except no. 6), the composition shows two oppositely placed figures curved to the shape of the mirror disc. This compositional scheme is broken in mirror no. 6, where a third warrior has been inserted between the seated ones.

As can be seen in the different sections of this analysis of stylistical similarity, mirrors nos. 1 and 2 are so alike that it seems reasonable to attribute them also to the same engraving master. Despite its poor state of preservation, mirror no. 3 has so many details in common with nos. 1 and 2 (floral wreath, poses of the individuals, general iconography) that this mirror can be attributed without hesitation to the same artist. Mirrors nos. 4, 5 and 6 also have traits in common. Although these are common to the other mirrors of the group, the differences, including the rendering of the anatomical details and general iconography, do not allow any sure attribution to a common engraver in these cases. The stylistic similarities, above all, in the decorative details, do, however, indicate a common workshop for all these six mirrors.

6.2. *The Lasa group.* This group consists of two mirrors.

1. Nude, winged female. Fig. 14.

The Danish National Museum. Inv. no. ABA 847.

Prov.: Unknown.

Diam.: 167 mm.

2. Nude, winged female. Fig. 15.

Musées Royaux d'Art et d'Histoire à Bruxelles. Inv. no. R 1303 (850^a)

Prov.: Orvieto.

Diam.: 162 mm.

The two mirrors were obviously made from the same model. Note, for instance, the strange appearance of the females' right hands. They are probably carrying a fig or a flower bud, instead of the more usual perfume rod.⁶⁹ The alabastrons behind the backs of the nudes are misinterpreted (cf. other winged nudes on Etruscan mirrors in, for example, *ES*). Their feet are placed in

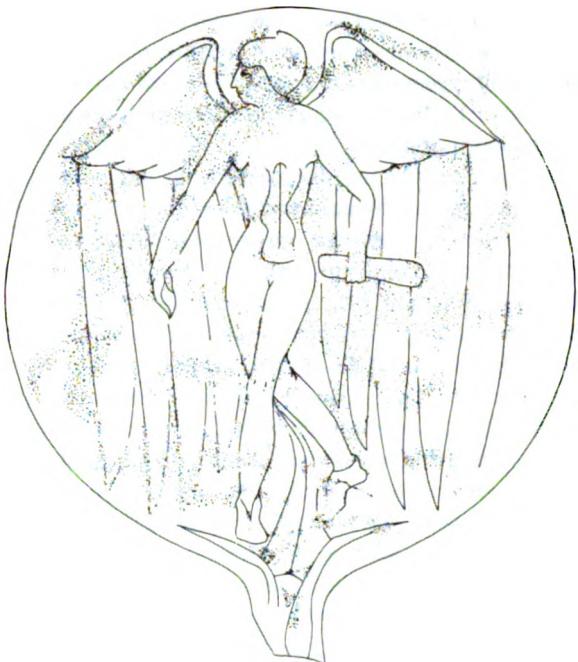


Fig. 14, Mirror Lasa no. 1. CSE, Denmark 1, cat. no. 7.



Fig. 15, Mirror Lasa no. 2. Brussels, Lambrechts' cat. no. 54.

the same position. Their wings have been given the same form. They have the same coiffure, greatly resembling a Phrygian cap (somewhat wrinkled in the Brussels mirror). The abdominal lines are identically drawn.

The motif of mirror UN23 (Fig. 16), also depicting a nude, winged female, differs from the other females described above. (Winged females of this type are generally, though somewhat incorrectly, called *Lasas*,⁷⁰ hence the name of the group). The shape of this mirror is more compatible with the shapes of the TLW group. The *Lasa* of the present mirror carries a laurel branch in her right hand, and her body is rendered with greater care than are those of the *Lasas* of the compared mirrors. Stylistical details, such as the representation of her shoes, differ from those shown on the TLW group. This is more like a Chiusi mirror, Brussels cat. no. 52 (Fig. 17). This woman has the same elegant movements, and the anatomical details are rendered in similar fashion. Her shoes are identical to those worn by the individuals of the TLW group. Although possible, it cannot be conclusively stated that these two mirrors were made at the same workshop as the other mirrors of the *Lasa* and the TLW groups. However, they certainly belong to the same production district: probably best looked for in the Chiusi-Orvieto-Bolsena-Sovana region.⁷¹

Thus, the mathematical analysis of the metal compositions within a restricted group of mirrors, as well as the stylistic comparison of these mirrors with an extended material, tend to indicate that the mirrors of the TLW group, as well as those of the *Lasa* group, were fabricated in a common workshop. There are differences within the two groups. The TLW mirrors are heavier and thicker than the lighter and thinner mirrors of the *Lasa* group. There is nothing to prove that they were not issued from the same workshop, as stated by Rebiffat-Emmanuel: "Une même fonderie pouvait très bien couler simultanément des miroirs de plusieurs sortes, par exemple des flans destinés à devenir des miroirs chers et d'autres destinés à devenir des miroirs bon marché: donc verser une même coulée dans des moules typologiquement différents, ou tout au moins de dimensions différentes."⁷² The mirrors of the TLW group might thus have been intended for wealthier clients than the cheaper and more stereotyped *Lasa* mirrors.



Fig. 16, Mirror UN23, CSE Denmark 1, cat. no. 23.



Fig. 17, Mirror Brussel, Lambrechts' cat. no. 52.

7. The Location of the Workshop in Question

Considering the resemblances between certain mirrors, the analysis so far indicates a common workshop. Iconographic and stylistic traits are the only helpful tools in the further discussion of the question of the location of such a production centre (the use of trace-element analysis, in order to determine, for example, the use of different copper ores in the various regions could, in principle, be fruitful but is thwarted by the lack of analytical data for comparisons). Studies of the decoration of Etruscan vases have shown that different regions have distinct, stylistic traditions.⁷³ Fischer-Graf has demonstrated that such stylistic distinctions are equally valid for Etruscan mirrors.⁷⁴

7.1. The Dating of the Mirrors. It is very important to deal with mirrors which are as close in date as possible, in making an attribution to a certain workshop. Correctly estimating the age of an Etruscan mirror is still a highly subjective enterprise. In many cases, the date of a mirror is derived from comparisons with other (often Greek) products of handicraft and art, since mirrors dated by their contexts are rare items in any collection. Etruscan mirrors can be separated into two large groups: (a) circular mirrors with a tang to be inserted into a handle made of an organic material (bone, horn or ivory); and (b) circular mirrors cast in one piece with the handle. Tang mirrors occur in the sixht century and last at least down to c. 300 B. C.⁷⁵ "Handle mirrors" seem to occur during the fourth century;⁷⁶ it is not known with certainty when fabrication ceased.⁷⁷ It is reasonable to assume that the technical *acme* of mirror production was achieved during the middle of the fourth century B. C., before the standardization of form and decoration had yet begun.

Although the dates of the mirrors placed in the TLW group cover a period from 330 to the third century B. C., they are likely to be much closer in date, as is shown by their stylistic and metallurgical similarities. It is not possible to give the mirrors from this workshop any exact date of fabrication. Considering the form, dimensions and style of the mirrors, a dating in the second half of the fourth century, probably close to 330 B. C., can be suggested for all the mirrors of the TLW group. This dating is also assigned to the Lasa group in this study. The geometrical, dimensional and chemical similarities whitin these two groups are sufficient to justify this opinion.⁷⁸

7.2 Specialization or Integration in the Mirror Production? The fabrication of a bronze mirror in the middle of the fourth century required, among other things, the integration of the following phases:

- (a) A detailed control of the composition of the main components of the alloy (see sections 1.3 and 8).
- (b) The casting process with regard to the required physical dimensions of the mirror.
- (c) The engraver's work and his needs in relation to the motif with which he was supposed to decorate the mirror.
- (d) The application of separate handles made of a fundamentally different material.

This brief survey of some of the phases involved in mirror production illustrates the probablility that all were carried out on the same premises – the mirror workshop. The term "workshop" is used in this paper with the same meaning as *l'atelier* in the work by Rebuffat-Emmanuel.⁷⁹ There might theoretically be serveral workshops in a common production centre. Quite likely, such a centre was an Etruscan city, such as Vulci or Orvieto.

7.3. A Mirror Workshop at Orvieto? Eight mirrors are here assigned an origin in the same workshop. Of these, TLW nos. 1, 3 and 6 and Lasa no. 2 have provenances, though somewhat uncertain, in the Orvieto-Bolsena area. TLW nos. 2 and 5 were found in Tarquinia and the find places of TLW no. 4 and Lasa no. 1 are unknown. Half the numbers in the groups are thus probably from the Orvieto-Bolsena area. There are, in my opinion, other indications of Orvieto as the production centre in question.

Firstly, there is considerable evidence of a large production of bronzes in Orvieto (now identified by most scholars as the Etruscan Volsinii).⁸⁰ In the context of a discussion of bronze statuary, the Elder Pliny, in *Nat. Hist.* 34:16, 34, cites Metrodorus of Scepsis, who reproached the Roman for having taken by storm the city of Volsinii for the sake of its 2000 bronze statues. Fulvius Flaccus, who in 265 B. C. celebrated his triumph over the Volsinians, took booty there. At the church of Sant 'Omobono in Rome have been found fragments of two stone bases showing traces of statue feet and cramps. They have two identical inscriptions: M FULVIO Q F CONSUL D VOLSINIO CAPTO.⁸¹ A bronze head of a youth⁸² and the famous Mars from Todi⁸³ were probably made in this city.⁸⁴ The Ny Carlsbergs Glyptothek in Copenhagen has a large number of various small bronzes (mirror no. 1 is one of them) said



Fig. 19, Pedimental statue, Belvedere Temple, Orvieto. Andrén, Pl. 64:209.

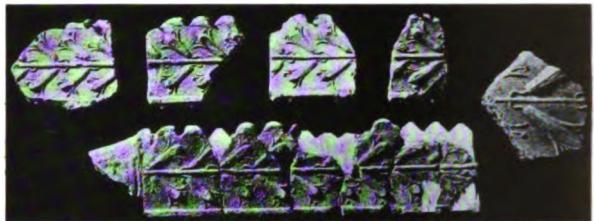


Fig. 18, Terminal tiles. Belvedere Temple, Orvieto. Andrén, Pl. 69:227.

to originate from Orvieto.⁸⁵ Pfister-Roesgen suggest that a production centre for bronze mirrors should be sought in Orvieto.⁸⁶

Secondly, a study of other artifacts attributed to, or actually found in, Orvieto shows some similarity to these mirrors. Lambrechts has pointed out the similarities between the middle warrior on mirror no. 6 and the Todian Mars.⁸⁷ Roncalli convincingly argues that the Mars was made in Orvieto.⁸⁸ The similarities of type and pose are very close. A study of the terracotta decorations of the Belvedere temple in Orvieto provided some interesting results when these decorations were compared with those on the mirrors of the TLW group. Andrén's book, *Architectural Terracottas from Etrusco-Italic Temples*,⁸⁹ was used in this evaluation and the plate numbers refer to this book. Lily flowers similar to those of the decorative wreaths on the TLW mirrors are found on fragments of terminal tiles from Tarquinia (Pl. 22:78), from Civita Castellana (Pl. 52:167) and from Orvieto (Pls. 69:227 and 70:233). The chains of lilies from these terminal tiles vary slightly, and the lily chain from Orvieto (Pl. 69:227) (Fig. 18) resembles the lilies of the decorative mirror wreaths. The pedimental sculptures of the same temple have stylistic traits in common with some warriors of the TLW group. Compare also the cuirasses of the seated warriors of mirror TLW no. 5 with the very similar rendering of a cuirass worn over a tunic by the warrior in Pl. 65:212. The mantle worn by the male in Pl. 64:209 (Fig. 19) is fastened in identical fashion with a button and has the same heavy folds as the mantle of the standing youth of mirror no. 4 (cf. the rendering of mantles (chlamys) on other contemporary Etruscan mirrors in, for example, *ES I-V*). It is interesting to note that some mirrors with a similar rendering of, for instance, cuirasses and/or mantles also have other details in common with the TLW mirrors. The mirror *ES IV:391,3* (Fig. 20) has mantles fastened in a way (with a button and falling in heavy folds) similar to those on the mirrors TLW nos. 2 and 4. The helmets and shoes are

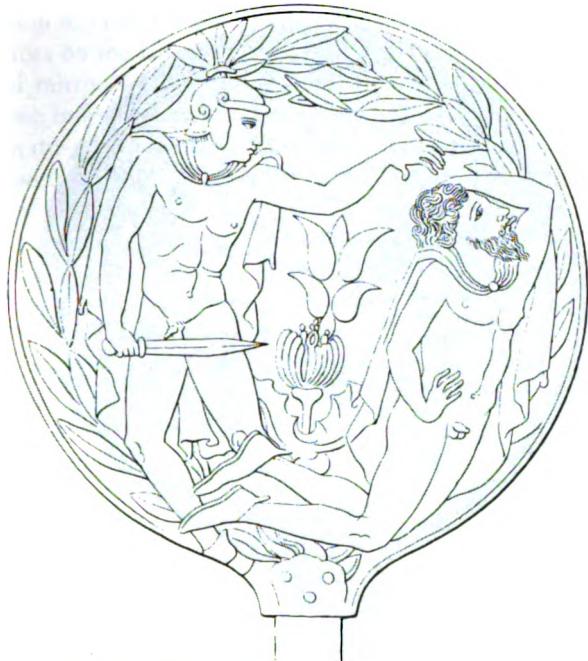


Fig. 20, Mirror *ES IV*, 391:3.

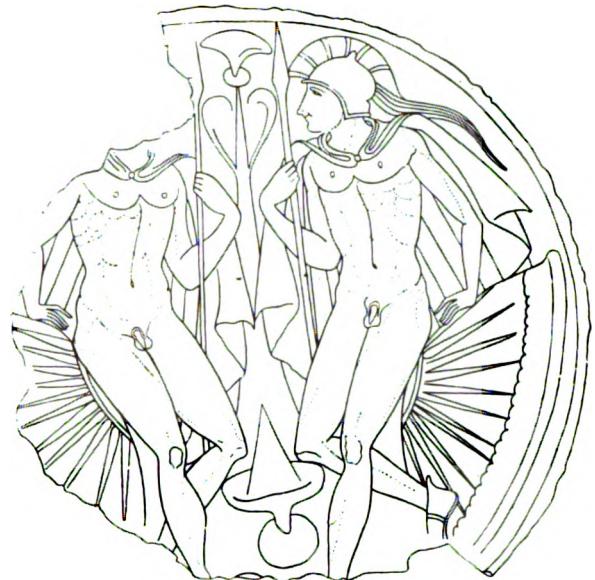


Fig. 22, Mirror from the Montecavalli necropolis in Orvieto.



Fig. 21, Mirror *ES II*, 230.



Fig. 23, Mirror, *ES I*, 51:1.



Fig. 24, Mirror, *ES I*, 51:2.



Fig. 25, Mirror, *ES V*, 135:2.

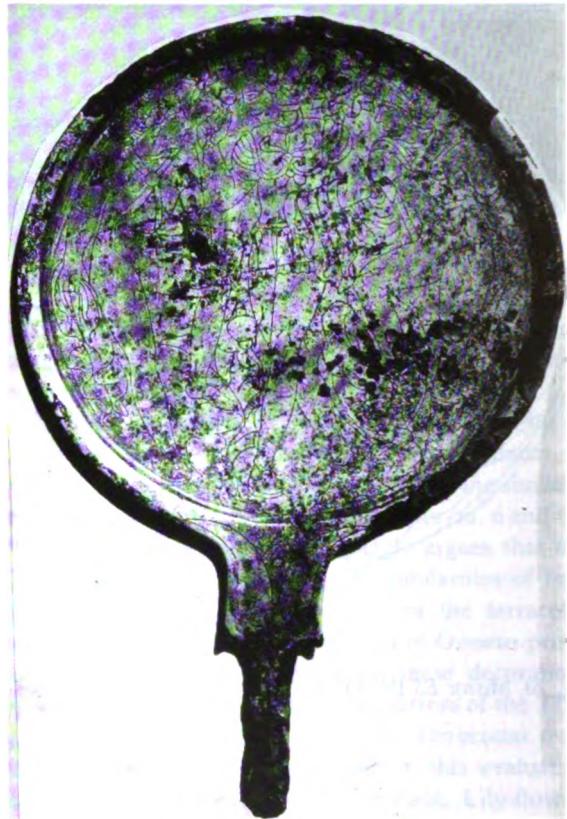


Fig. 26, Mirror from the Settecamini necropolis in Orvieto. Photograph by the author. By courtesy of Museo del Opera del Duomo in Orvieto.

engraved in the same manner as on the TLW mirrors. The lotus flower, here used as a filling ornament, is similar to the lotus in the exergue of mirror no. 1. Above all, the surrounding wreath is common to the TLW group, but the leaves are supplied with veins. The mirror *ES II:230* (Fig. 21) shows similarities with the TLW group not only in the rendering of anatomical details and adornments; the lilies on the TLW mirrors are also found as filling ornaments.

Finally, using a mirror found in the Montecavalli necropolis in Orvieto⁹⁰ (Fig. 22), yet another group of mirrors can be traced to a production centre in this city; *ES I:51, 1 and 2* (Figs. 23 and 24) and *ES V:135,2* (Fig. 25). These mirrors have more filling ornaments than the pure-style mirrors of the TLW group. The characteristics shared with the TLW mirrors are the manner in which helmets, shoes, folds and ties of mantles are represented. Decorative details, such as lily wreaths (*ES I:51,2*) and double lotuses (*ES I:51,1*), are com-

mon to both groups. The wavy lines between the warriors on the latter mirror (Fig. 23) are similar to those of mirror TLW no. 1. The general compositions with two individuals facing one another and slightly curved in the rounded shape of the mirror discs are common to the two groups. Yet another mirror found in the Settecamini necropolis in Orvieto⁹¹ (Fig. 26) has stylistic traits in common with the other mirrors discussed here. Note, for example, the lily decoration on the talon and the big calyx rising from a wavy stem both here and on mirror ES I:51,2.

All the mirrors in these groups are chronologically placed in the 4th century. The mirrors of the TLW group and the Lasa group are from the second half of this century, c. 350–325 B. C., while the “Warrior group” may be somewhat later. This assumption is based on the fact that the mirror from the Montecavalli necropolis was found in a context with a *terminus post quem* from the middle of the 4th century. The smaller format of these mirrors makes it possible that they are somewhat later (probably not more than one decade) than the TLW group. Andrén dated the Belvedere temple around 400 B. C. or later.⁹² The Todian Mars has been placed in the 4th century.⁹³ Thus the datings create no problems for a stylistic comparison. Another question can be asked in the words of Alison Burford, “How is it that a vase, a decorated bronze object, a terracotta figurine or a silver mirror can convey a clear echo of the cultural and intellectual activity of the age in which it was made?” She answered, “The craftsman who made it was part of the society for which he worked; the good craftsman, partly instinctively, captured the feel of the times in his work, and the greater the craftsman the surer his instincts for such things . . .”⁹⁴ The mirrors of the TLW group are highquality mirrors, functional, as is indicated by their metal compositions, and aesthetically pleasing. In short, they are consummate products of the same artistic and cultural centre that created the decorations of the Belvedere temple and bronze statues such as the Todian Mars.

8. Discussion

There is no simply-evaluated tendency for the mirrors to cluster according to known proveniences. Several mirrors with quite different, stylistic characteristics have been connected in these analyses. Of course, this situation indicates some of the problems facing the archaeologist in attempting to find a structure in the

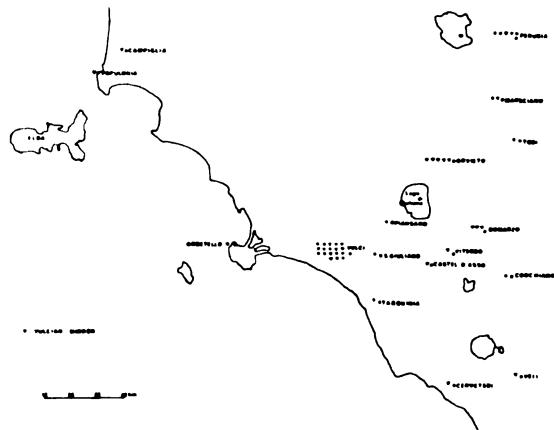


Fig. 27, Actual find places of mirrors produced in Vulci (according to Fischer-Graf, cf. note 53).

available, inevitably incomplete body of information. For instance, the fact that a mirror has been found in one specific city (the provenience) does not automatically imply that this is also the place of origin. Evidently, mirrors were distributed over large areas (cf. Fig. 27). Thus, the provenience at best merely indicates the origin. However, as we have seen in the case of the Vulci mirrors, a large series of mirrors with known proveniences and stylistic affinities simplifies the solution of this dilemma (in this particular case, 18 out of 42 mirrors seem to have a find place identical with the manufacturing city).

One limitation in this study is that the analyses made on the mirrors in the two collections were not directly compatible. The fact that different metallographic analyses have been used necessitates careful intercalibration studies, in order to compare them directly in the same cluster analysis. Further, the degree of precision of element-analytical data may in some cases limit the usefulness of such statistical methods as are used here. The stated errors for the major elements (Cu and Sn) are $\pm 1\%$ in the Danish AAS analysis and $\pm 2\%$ Cu and $\pm 0.3\%$ Sn in the X-ray fluorescense analysis of the Brussels collection. These particular errors are not likely to affect the main clustering tendencies; however, they may alter the detailed relations between the mirrors within the main cluster. Refinements of these methods would greatly benefit from high-precision metallographic analyses, preferably with several samples taken from different areas of the mirror.

However, certain general trends are discernible from the methods used in the present study.

The main distinguishing factor is the pattern of cop-

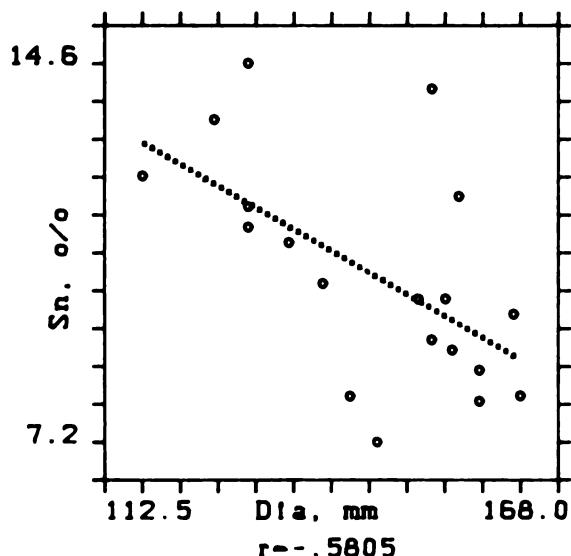


Fig. 28. The relations between the tin concentrations and the mirror diametres of the Danish collection. The dotted line indicates the regression equation. The correlation coefficient r is given in the figure.

per-tin distribution, which separates the mirrors into different clusters. "Outliers" often show distinct "contamination" (intended or not) by metals of the intermediate group (Ag and Pb in these cases). The importance of the unnormalized values of the trace elements can be studied in Fig. 1, which gives the clustering tendencies of the mirrors based only on their Cu-Sn distribution. As could be expected, the trace elements add only slight differences, although the very high lead contents of five mirrors in the Brussels collection (cat. nos. 36, 45, 63, 69 and 71) upset the correlation.

With the balance between brittleness and reflecting quality in mind, it is of interest to investigate whether and how the metallic compositions have differed during the epochs in question.

It can safely be stated that opinions as to the optimum ratio of copper to tin within a mirror differed throughout ancient Etruria. It is likewise safe to conclude that these variations are due mainly to the size of the mirror discs (see Figs. 28 and 29). There is also a slight (hardly significant) indication in the material that the tin concentrations are higher in later mirrors (see Figs. 30 and 31). Of course, such a comparison is limited by the inevitably imprecise dating of the mirrors. This tendency is at present best explained by the fact that late (3rd century) mirrors are generally smaller than the mirrors in the material dating from the 5th and 4th

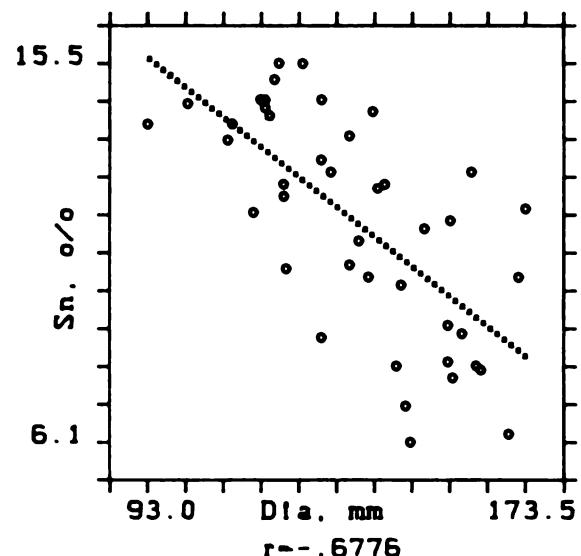


Fig. 29. As in Fig. 28, but with respect to the Brussels collection.

centuries.⁹⁵ When the fashion demanded larger mirrors, the reflecting quality might have to be partially sacrificed, but when smaller mirrors were allowed, experimentation with tin concentrations might have been possible in a quest for optimal results.⁹⁶ A mirror with a larger amount of copper gave a more flattering, red reflection of the female face than the more truthful, white polish of tin-rich mirrors.⁹⁷ This was perhaps a good enough reason for well-to-do clients to buy the larger, heavier and more expensive mirrors of the 5th and 4th centuries.

The interesting result that some mirrors with a common provenience clustered in two independently analysed collections remains to be discussed. To facilitate the references in the following discussion to the two different collections, mirrors in the Danish collections will be referred to both by letters and cat. numbers (for example VU01), while the Brussels mirrors will be referred to only by catalogue number.

The mirrors ascribed by the stylistic analysis to a common workshop, probably located in Orvieto, also clustered in the two collections analysed. In this case, the result is only significant within each collection, and it is highly regrettable that no compatible data are available from a common analysis of all the four mirrors. This further stresses the recommendation that forthcoming fascicles of the *CSE* should use the same analytical method. The Cu contents of mirrors OR25 and UN07 are 89.5 % and 89.0 %; respectively; the Sn

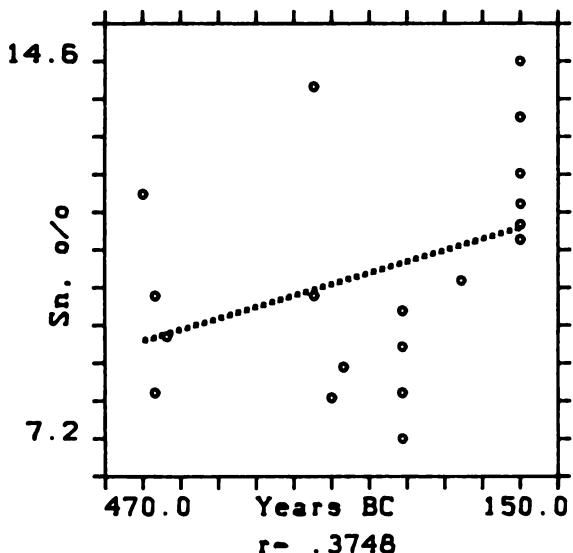


Fig. 30. The relation between the tin content and the dating of the Danish mirrors. All dates follow CSE, Denmark 1. When, for example, a date "3rd century" is given by CSE, the value 250 is used on the abscissa. Thus each value is assumed to be certain within ± 50 years, unless exact information is given. The dotted line indicates the regression equation. The correlation coefficient r is given in the figure.

values are 10.0 % and 9.7 % respectively. The Brussels mirrors are less rich in Cu (cat. nos. 31 and 54 contain 87.0 %) and have tin values of 11.9 % and 12.8 %. Considering the stated errors, these data are close enough to support the hypothesis of a common production centre for all four mirrors.

Cluster no. 3b in the Brussels material and mirrors VU01 and VU02 from cluster no. 3 in the Danish collection clustered according to their proveniences, as opposed to the general tendency of the material, in which contemporary mirrors cluster. The Viterbo cluster contained the oldest mirror in the material, no. 20, as well as two mirrors (no. 22 and mirror 38 of the "Kranzspiegel" group) dating from the beginning of the 3rd century. A time span of at least 150 years separates the Danish mirrors VU01 and VU02. The mirrors in the clusters with a late date have tin concentrations proportionately low (no. 22 10.5 %, no. 38 11.1 % and VU02 11.8 %) in relation to their dates. The ancestry of the workshop in question may have been responsible for this. Vulci is known to have produced a large number of mirrors from the 4th century onwards.⁹⁷ Mirror no. 20, although found in Viterbo, has been attributed to Vulci by Fisher-Graf.⁹⁸ The similarities between these mir-

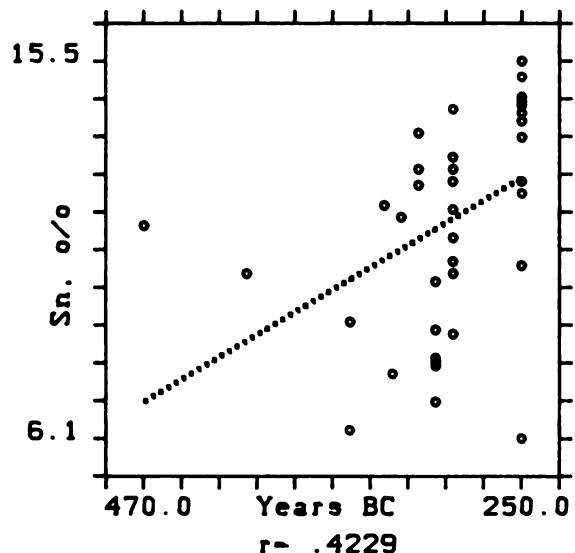


Fig. 31. As in Fig. 30, but with respect to the Brussels collection.

rors (all of them with respect to metal composition; mirror VU02 and 20 stylistically and VU01, 22 and 38 with respect to dimensions, form and chronology) may suggest that they all originated from a Vulci workshop. A strong tradition as to the best composition of a mirror might be present in a long-established workshop unwilling to adopt new fashions in alloy composition. Workshops beginning to fabricate mirrors at a later stage might, on the other hand, be more inclined to experiment. This might explain the cases in which older and later mirrors cluster together. On the other hand, the closely related mirrors of the "Kranzspiegel gruppe" are supposed to have had an origin in the same workshop, and in the many suggestions as to where it should be sought, Vulci has never been mentioned.⁹⁹ There are altogether five Kranzspiegels (or Spiky Garland mirrors): UN06, UN13, TA21, no. 1 and no. 38. VU01, UN13 and TA21 clustered in different groups, as will be seen in Fig. 4. No. 1 clustered in the same group as the mirrors of the supposed Orvieto group and no. 38 was close to them, placed in subgroup 3b. UN06 clustered in the Orvieto group of the Danish material, which also contained another mirror (VU03), stylistically close to the Vulci mirrors (and actually found there). Van der Meer suggested an origin in Caere or Bolsena for the Spiky Garland mirrors.¹⁰⁰ At present, it is enough to conclude that mirrors attributed to Vulci show considerable likenesses to mirrors attributed here to the Orvieto-Bolsena area with respect to metal com-

position (cf. Tables 3 and 4). Traditions from Vulci learnt there by a founder and transferred to the Orvieto-Bolsena district by him are a possible explanation.

Another group can perhaps be traced amongst the mirrors in the Brussels cluster no. 2 concerning mirrors nos. 67, 70, 13 and 46 with strong, stylistic connections. These mirrors have the same encircling ivy wreath and are connected in style with the San Fransisco mirrors discussed by del Chiaro.¹⁰¹ Some of them have unusually high lead concentrations. It is interesting to note that a mirror in the Swedish Zorn collection, stylistically close to UN46, also gave the same pattern of high lead values in two independent analyses.¹⁰² High lead values may sometimes (but not as a rule) indicate forgeries; perhaps this is the case of the very strange mirror VO53.

The slight tendency for tin concentrations to be higher in the later mirrors can be studied in the Brussels cluster (subgroups nos. 4a and 4b). 4b contains only mirrors of the 3rd century B. C., all with a standardized Dioskouroi or Lasa motif. The other subgroup of late mirrors, 4a contains such standardized mirrors, as well as some elaborate and presumably earlier "handle mirrors". Perhaps the mirrors in cluster 4 originated in a late northern workshop, as suggested by Salskov Roberts.¹⁰³

9. Conclusions

The chief value of computer-supported treatment, such as that used in this paper, is its capacity to generate hypotheses from otherwise unmanageable quantities of (often multidimensional) data. In order to evaluate such hypotheses, traditional, archaeological methods, such as, in this case, a stylistic approach, are mandatory.

In particular, such joint analyses of metallographic and stylistic characteristics are valuable in dealing with Etruscan mirrors. Here a unique opportunity arises, when the results of a statistical treatment of metal analyses can be compared with the stylistic traits of the mirror engravings.

The use of multivariate analysis demonstrating clustering tendencies – illustrated in dendograms and diagrams based on a factor analysis – yielded directly interpretable results. The use of factor analysis for classification purposes thus seems quite informative. Further refinements of this and similar methods should focus on the extension and application of such methods with respect to soft-type data. Much work remains to be done

in developing appropriate models for such a treatment.

The metal analyses used in this paper as a basis for statistical treatment were well established and documented. The value of such hard data cannot be overrated, and the overall result proved their usefulness as an aid in the primary classification work. One particular need, however, is to obtain rapid analyses (such as particle-induced, X-ray-emission analysis, PIXE)¹⁰⁴ of many parts of a mirror, which would increase the reliability of the data. Three different sampling areas should be sufficient to reduce the uncertainties of inhomogeneities in the original bronze alloy. A mean value (plus a measure of the dispersion) of these different points could then be used in the basic matrix to be cluster-analysed.

The hypothesis of an Orvieto workshop, generated by statistical and stylistic analyses of the Danish collection, is independently supported by analogous tendencies in the Brussels collection. At present, joint analyses, such as those discussed in this paper, seem to be the best practicable means of approaching the challenging problems in the world of the Etruscans and their mirrors.

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¹ Cf., for instance, R. D. de Puma, Greek Myths on three Etruscan Mirrors in Cleveland. *The Bulletin of the Cleveland Museum of Art*, Vol. LXX, no. 7 (1983) 290–303, and T. Melander, Some Late Etruscan mirrors in the Thorvaldsen Museum. *Cahiers d'Archéologie Romande* 17 (1979) 161–167.

² E. Gerhard, *Etruskische Spiegel I–IV* (1840–1867), and E. Gerhard, G. Körte and K. Klugmann, *Etruskische Spiegel V* (1897), Berlin. Hereafter cited as *ES I–V*.

³ N. Thomson de Grummond (ed.), *A guide to Etruscan mirrors*, Tallahassee (1982), gives a bibliography.

⁴ For detailed information, see *Studi Etruschi* 45 (1977).

⁵ Thomson de Grummond (*supra*, n. 3). This estimation is given in the preface, p. viii.

⁶ G. Sperl, *Sinn und Methode der inneren Typologie metallischer Fundobjekte*. In H. Hennicke (ed.), *Mineralische Rohstoffe als Kulturhistorische Informationsquelle*, Hagen (1978) 2-13.

⁷ P. T. Craddock, The Compositions of the Copper Alloys used by the Greek, Etruscan and Roman Civilization. 1. The Greeks before the archaic Period. *Journal of Archaeological Science (JAS)* 3, pp. 93-113. 2. The Archaic, Classical and Hellenistic Greeks. *JAS* 4 (1977) 103-123. 3. The Origins and Early Use of Brass. *JAS* 5 (1978) 1-16.

⁸ B. Sassatelli, *CSE*, Bologna, Museo Civico 1-2, Rome (1981), H. Salskov Roberts, *CSE*, Denmark 1, Odense (1981), and L. B. van der Meer, *CSE*, The Netherlands, Leyden (1983).

⁹ R. Lambrechts, *Les miroirs Étrusques et Prénestines des Musées Royaux d'Art et d'Histoire à Bruxelles*. Brussels (1978).

¹⁰ L. Maes, X-ray fluorescence spectrometric analysis of Etruscan mirrors. *Journal of the European study group on Physical, Chemical and Mathematical Techniques applied to Archaeology (PACT)*, pp. 131-137.

¹¹ R. Brownsword, X-Ray Fluorescence Analysis of non-ferrous Archaeological Metalwork. Part 2. Archeological Applications. *Analytical Proceedings*. March 1985, Vol. 22, pp. 73-75.

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¹³ R. Bowman, A. M. Friedman, J. Lerner and J. Milsted, Impurity occurrences in copper ores and their relationships to ore types. *Archaeometry* 17, 2 (1975), pp. 157-163.

¹⁴ *Ibid.*, p. 161.

¹⁵ R. F. Tylecote, M. A. Ghaznavi and P. J. Boydell, Partitioning of the trace elements between the ores, fluxes, slags and metal during the smelting of copper. *JAS* 4 (1977), pp. 305-333.

¹⁶ *Ibid.*, pp. 305-333.

¹⁷ *CSE* (*supra*, n. 8).

¹⁸ Cf. Formigli (*supra*, n. 12), p. 183

¹⁹ See *supra*, n. 13.

²⁰ A thorough discussion of this question is to be found in J. D. Muhly, Sources of Tin and the Beginnings of Bronze Metallurgy. *American Journal of Archaeology* 2 (1985), pp. 275-291.

²¹ Formigli (*supra*, n. 12) says that tin is present in Campiglia as both microscopic grains and lenses in the haematite there.

²² G. Dennis, *Cities and cemeteries of Etruria*, Part II. London (1883), p. 578.

²³ A. Oldeberg, *Metallteknik under förhistorisk tid* (with a summary in German), Lund (1942), p. 126, but see also J. P. Nortover, The Exploration of the long-distance Movement of Bronze in Bronze and Early Iron Age Europe. *BIAL* 19 (1982), pp. 45-72, esp. p. 50.

²⁴ Craddock in Salskov Roberts, *CSE*, Denmark 1, p. 132.

²⁵ P. Rowe, The chemical composition of bronze Etruscan mirrors. In N. Thomson de Grummond (*supra*, n. 3), pp. 52-54.

²⁶ Craddock (*supra*, n. 7:1, 1976), pp. 93-113.

²⁷ C. Panseri and M. Leoni, The manufacturing technique of Etruscan mirrors. *Studies in Conservation* III:2 (1957), pp. 49-62.

²⁸ Cf., for example the separate mirror handles in *CSE* Denmark, cat. no. 17, with high lead concentrations (41.1 %), and Ö. Wikander, Two Etruscan Thymiateria in the von Beskow Collection. *Medelhavsmuseets Bulletin* 18 (1983), pp. 45-67, Appendix, p. 67.

²⁹ Maes (*supra*, n. 10), p. 136.

³⁰ Cf. de Puma (*supra*, n. 1), note 1, p. 209.

³¹ Brownsword (*supra*, n. 11), p. 62, and Maes (*supra*, n. 29), p. 131.

³² Brownsword (*supra*, n. 11), p. 62.

³³ In antiquity, there was no such division between the craftsman and the artist as there is today. There are even examples that one person assumed both functions in a workshop. Cf. A. Burford, *Craftsmen in Greek and Roman Society*, London (1972), pp. 96-107.

³⁴ Salskov Roberts (*supra*, n. 8), *passim*.

³⁵ *Supra*, n. 28.

³⁶ For a discussion of tinned surfaces of mirrors with high lead contents, see Craddock (*supra*, n. 7:2, 1977), p. 108.

³⁷ It is not quite certain that mirror cat. no. 25 really was found in Orvieto. It is part of the so-called Orvieto Find, a large group of vases and bronzes donated to the Ny Carlsberg Glyptotheke in 1924; cf. Salskov Roberts (*supra*, n. 8), p. 115.

³⁸ L. Maes and G. Genin in R. Lambrechts (*supra*, n. 9), 373-377.

³⁹ J. E. Doran and F. R. Hodson, *Mathematics and computers in Archaeology*, Edinburgh (1975), *passim*. C. Orton, *Mathematics in Archaeology*, London (1980), *passim*.

⁴⁰ N. H. Nie, H. C. Hull, J. G. Jenkins, K. Steinbrenner and D. H. Brent, *Statistical Package for the Social Sciences (SPSS)*. New York (1975), *passim*.

⁴¹ D. Wishart, *Clustan*, User Manual Cluster Analysis Package. Edinburgh (1982), *passim*.

⁴² Tylecote *et al.* (*supra*, n. 15), pp. 305-333.

⁴³ Doran and Hodson (*supra*, n. 39), pp. 136-139.

⁴⁴ Wishart (*supra*, n. 41), pp. 112.

⁴⁵ Nie *et al.* (*supra*, n. 40).

⁴⁶ Wishart (*supra*, n. 41).

⁴⁷ Doran and Hodson (*supra*, n. 39), p. 135.

⁴⁸ Wishart (*supra*, n. 41); Fischer Iris Data, pp. 32.

⁴⁹ Cf. Maes (*supra*, n. 29), p. 133 "...; silver was found to be inhomogeneous".

⁵⁰ D. Emmanuel-Rebuffat, Typologie générale des miroirs étrusques à manche massif. *Revue Archéologique* 2 (1984), pp. 195-226. She places these two mirrors in one of her chief categories, "miroirs à manche round" but in two different subgroups. See p. 216 (UN20) and p. 217 (UN19).

⁵¹ *Ibid.*, p. 216 (UN20), and p. 219 (UN13).

⁵² *Ibid.*, p. 219.

⁵³ U. Fischer-Graf, Spiegelwerkstätten in Vulci. *Archäologische Forschungen* 8. Berlin (1980), *passim*.

⁵⁴ Emmanuel-Rebuffat (*supra*, n. 50), p. 214.

⁵⁵ R. Herbig, Die Kranzspiegelgruppe. *St. Etr.* 24 (1955), pp. 185–205. These mirrors are also discussed by Larissa Bonfante in N. Thomson de Grummond (*supra*, n. 3), pp. 157–160.

⁵⁶ This feature appears on many, albeit not all Etruscan mirrors and is thought by many to be related to manufacturing practices; see N. Thomson de Grummond (*supra*, n. 3), p. 50.

⁵⁷ Fischer-Graf (*supra*, n. 53).

⁵⁸ According to Emmanuel-Rebuffat, it is disputable whether these mirrors lasted beyond 250 B. C.; cf. *supra*, n. 50, p. 211, note 4, where she briefly accounts for her present standpoint. Salskov Roberts generally favours a low dating in CSE. She justifies this further in a later work: H. Salskov Roberts, *Later Etruscan Mirrors. Evidence for Dating from Recent Excavation*. *Analecta Romana* XII (1983), pp. 31–54.

⁵⁹ The piriform mirrors were first distinguished as a group by G. Matthies, *Die Praenestinischen Spiegel*, Strasburg (1912). They are supposed to have been manufactured in Praeneste. According to Rebuffat-Emmanuel, it would be more appropriate to presume a wider, Latino-Praenestine market for these mirrors (Rebuffat-Emmanuel, *Le miroir Étrusque d'après la collection du Cabinet des Médailles*, Lille (1974), pp. 638–9). Brussels mirror cat. no. 53 is not strictly circular. In contrast to piriform mirrors (vertical axis wider than the horizontal), the horizontal axis of this mirror is 4 mm wider than the vertical one. Consequently, this mirror is not a typical piriform mirror and is therefore included in the statistical analysis.

⁶⁰ Rebuffat-Emmanuel (*supra*, n. 59), pp. 627–628.

⁶¹ K. Schauenburg, Zu Griechische Mythen in der Etruskischen Kunst, *Jdl* 85, (1970), pp. 28–81.

⁶² Fisher-Graf (*supra*, n. 53), p. 4.

⁶³ L. Bonfante, *Etruscan Dress*. London (1975), *passim*.

⁶⁴ Lambrechts (*supra*, n. 9), *passim*.

⁶⁵ ES I–V.

⁶⁶ Previously presented by Gerhard, ES V, Pls. 129;1 and 40;2.

⁶⁷ Previously presented by D. Carandini, Appunti sul restauro di alcuni Specchi in bronzo provenienti dal Museo Nazionale di Tarquinia. *St. Etr.* 40 (1972), pp. 277–287, mirror “a”.

⁶⁸ The results of a more thorough physical examination of these mirrors are beyond the scope of the present work and will be given in a forthcoming, more specific study of this workshop.

⁶⁹ Melander (*supra*, n. 1), p. 164.

⁷⁰ A. Rallo, Lasa. *Iconografia e Esegesi*. Florence (1979), *passim*.

⁷¹ Cf. Rebuffat-Emmanuel (*supra*, n. 59), p. 638.

⁷² *Ibid.*, p. 628.

⁷³ J. D. Beazley, *Etruscan Vase-Painting*, Oxford (1947), *passim*.

⁷⁴ Fisher-Graf (*supra*, n. 53).

⁷⁵ N. Thomson de Grummond (*supra*, n. 3), pp. 8–14.

⁷⁶ *Ibid.*, p. 12.

⁷⁷ Rebuffat-Emmanuel (*supra*, n. 59), p. 621.

⁷⁸ L. B. van der Meer places a mirror close to this one in dimensions and form in the last quarter of the fourth century. *CSE*, The Netherlands, cat. no. 3, p. 15.

⁷⁹ Rebuffat-Emmanuel (*supra*, n. 59), p. 636.

⁸⁰ This discussion is recorded, concluded and commented on by A. Andrén in a small booklet: *Orvieto. Studies in Mediterranean Archaeology*, Göteborg (1984). The book is written in Swedish, but a useful bibliography on this issue is to be found on p. 53.

⁸¹ *Ibid.*, p. 38.

⁸² S. Haynes, Ein Etruskischer Bronzekopf vom Bolsenasee. *ST. Etr.* 33 (1965), pp. 523–525.

⁸³ F. Roncalli, Il “Marte” di Todi. *Bronzistica Etrusca ed Inspirazione Classica*, in *Mémoire della Pontifica Accademia* 19, vol. II, Rome (1973), *passim*.

⁸⁴ M. Cristofani, *L’Arte degli Etruschi*. Saggi 605, Turin (1978), p. 159.

⁸⁵ V. Poulsen, *Ny Carlsberg Glyptothek. A Guide to the Collections*. Copenhagen (1973), p. 70.

⁸⁶ G. Pfister-Roesgen, *Die Etruskischen Spiegel des 5. Jhs. v. Ch.*, Frankfurt am Main (1975), p. 194.

⁸⁷ Lambrechts (*supra*, n. 9), p. 197.

⁸⁸ A. Andrén, *Architectural Terracottas from Etrusco-Italic Temples*. Lund (1939–40).

⁸⁹ M. Bizzari, Uno Specchio etrusco inedito da Orvieto. *Hommages à Marcel Renard III* (J. Bibauw, ed.), Collection Latomus 103 (1969), pp. 55–58.

⁹⁰ A. E. Feruglio, M. Martelli et al. *Pittura Etrusca a Orvieto*, Rome (1982), pp. 98–99.

⁹¹ Andrén (*supra*, n. 89), p. 186).

⁹² Roncalli (*supra*, n. 83), p. 90.

⁹³ A. Burford, *Craftsmen in Greek and Roman Society*. London (1972), pp. 127–28.

⁹⁴ Cf. N. Thomson de Grummond (*supra*, n. 2), pp. 13 and 14.

⁹⁵ The price of the expensive tin might also be an explanation (cf. Muhly (*supra*, n. 20), as well as the location of the workshop and its closeness to the tin sources (local or traded).

⁹⁶ Glenys Lloyd Morgan, personal communication.

⁹⁷ Cf. Fischer-Graf (*supra*, n. 53), *passim*.

⁹⁸ *Ibid.*, cat. no. V8, Pl. 2:4.

⁹⁹ Larissa Bonfante in N. Thomson de Grummond (*supra*, n. 3), p. 160, n. 39.

¹⁰⁰ *Ibid.*, p. 160, note 39.

¹⁰¹ M. A. Del Chiaro, Two Etruscan Mirrors in San Francisco. *AJA* 59 (1955), pp. 277–286.

¹⁰² E-M. Johansson, S. A. E. Johansson, K. Malmqvist and I. M. B. Wiman, The feasibility of the PIXE technique in the analysis of stamps and art objects. *Nuclear Instruments and Methods in Physics Research* (1986), pp. 45–49, mirror no. 13 in Table 1.

¹⁰³ Salskov Roberts (*supra*, n. 58).

¹⁰⁴ Johansson et al. (*supra*, n. 102).

A Roman Funerary Relief with Telamones

Charlotte Scheffer

In 1784 King Gustaf III of Sweden bought a collection of antiquities from the art dealer Francesco Piranesi in Rome.¹ Among the antiquities was a piece decorated with Telamones and Erotes (Inv. No. NM sk 189), which has generally been identified as a cinerary urn, probably because of the inscription and the squarish recess in the top.² This interpretation is, however, far from certain.

The piece had already belonged to Francesco Piranesi's father, the engraver Giovanni Battista Piranesi, and had been engraved by him in two plates, one seen from the front and the other from the back.³ In the plates, the piece serves as the base of a monument stated to have been found in the ruins of a tomb on the Via Appia near Capo di Bove in a vineyard belonging to a certain Cenci. The crowning part of the "monument" is a boar-headed *rhyton* placed on top of a truncated column on feet. Below the feet, there is worked into this composition a fragment of what looks like the lid of a cinerary urn or altar, decorated with two griffins surrounding a lyre.⁴ Kjellgren, commenting on a list of the Piranesi antiquities sent to Sweden by Francesco Piranesi, states that the only antique parts are the central part of the *rhyton* and the front of the lid with the griffins.⁵ A relief attached at the back of NM sk 189 may also have been antique. NM sk 189 is now separated from the rest and the relief at the back has been removed.

According to Piranesi, as described in his own plate, the monument is remarkable on account of its singular form (*forma bizzarra*), which seems somewhat of an understatement, as one cannot but agree with the words of one person who published the inscription: "An vero omnia bene cohaereant, videant peritiores".⁶ From Francesco Piranesi's list, we know that the *rhyton* was restored by Malatesta, but it is impossible to say

whether this included the bizarre composition as a whole. One cannot quite forgo the impression that this is a work rather in the fantastic style of Piranesi and that maybe he had a hand in its coming into existence. Some things show that he was not trying to slavishly follow the model in his plates but worked freely from a general impression: the boar head is turned in the same direction whether it is portrayed from the front or the back, the decoration of the upper part of the *rhyton* is not the same in the two plates, and in one he has also added a couple of unlikely-looking griffins.

Description

NM sk 189 is made of whitish marble and is of an oblong shape. It is c. 87 cm long, 44 cm high and 34 cm deep. The central part of the top is flat and is provided with a large, oblong recess, 20.5 × 36 cm, carved with a large chisel. On either side, the top slopes upwards to a sort of flat peak and then descends again in a flat curve to the actual ends. The bottom side is not flat; the central part is raised above the ground and moulded at the sides. All the other sides are flat. The piece as a whole is fairly badly preserved, with lots of minor parts broken off. Some have been restored. Almost the whole back is missing and it is impossible to see the original surface, as it is covered with a cement-like material, with wooden plugs left by the now removed relief. At the front, there is a large crack and pieces are missing on both the sides and the bottom. Some have been re-attached or restored. A large piece is missing on the right-hand side, affecting also the right-hand short side. Further pieces are missing from the left-hand side.

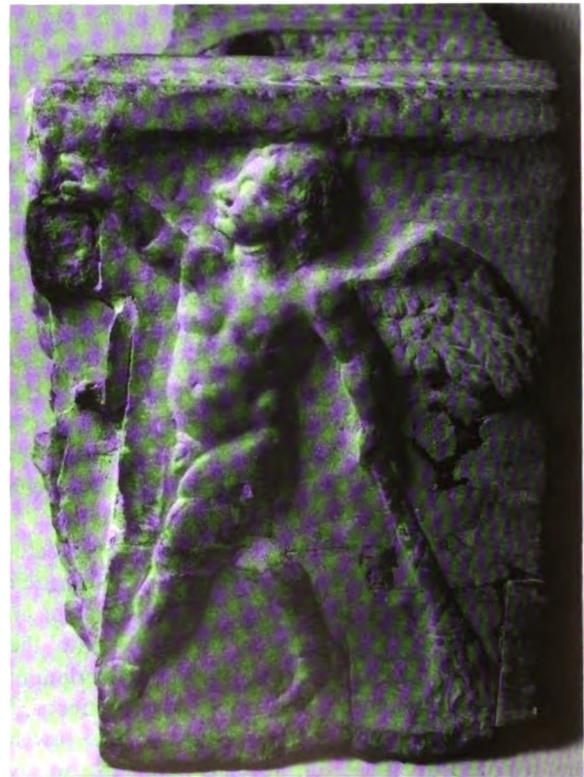
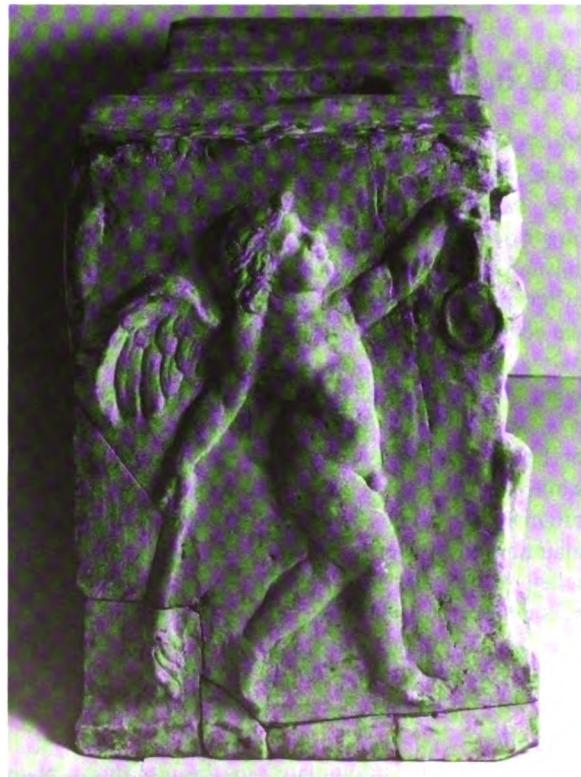
The front side is dominated by the inscription plate

with its moulded frame. On either side is a Telamon, i.e. a muscular man with a well-developed thorax is kneeling on one leg and raising both his arms above his head. In both cases, the man is kneeling on the inner knee, i.e. the left knee of the left-hand one and the right knee of the right-hand one. The lower part of the leg with the foot disappears into the stone behind the plate. The other leg is bent at a right angle and turned outwards. The lower parts of the bodies of the Telamones are turned outwards, while the heads and the upper parts of the bodies are slightly moved towards the plate. The Telamones have long hair and beards, both unruly: the hair stands up in a sort of toupet. The hands of the right-hand one are seen from the inside, as is the left hand of the left-hand one. His right hand is seen from the outside. The hands are clenched. In them, each Telamon holds a band or a *taenia* with two flat, round objects attached to each end.

On either side of the piece, there is a winged Eros walking towards the front. The outer leg is brought forward, the inner one is still behind and raised on the toes. The upper part of the body is turned outwards

with the belly button visible. The arms are shown in profile. The inner arm is raised up in front and the other is held behind the back, the hand holding a down-turned torch.

The two Erotes are not quite similar. The left-hand one has fairly longish curls flowing down to the shoulders with the top and back of his head smooth; the other has short curls all over his head. The left-hand one has a pug nose, the other a pointed nose with a concave bridge. The wings are dissimilar. The left-hand one has smaller wings, with the different kinds of feathers only sketchily indicated; the other has larger wings with every feather well defined with cross-strokes. The bodies are also different, the one having a tubby, fairly evenly fat body, the other a fattish body with rolls of fat around the neck, marked breasts and a pot belly. Note also the way the shape of the calf is outlined on the outer leg of the right-hand one. The left-hand torch is plain and the right-hand one seems to be wound with bands. The left-hand Eros holds a *tympanon* in his raised left hand.⁷ Near the border is a circumferential, incised line. It is possible that the right-hand one also







originally had a *tympanon*, but, if so, there are now no traces of it (although the corner is damaged, the border of the *tympanon* would have been visible).

On the top, close to the ends on either side, is a flower. On the back, on either side of the once added and now removed relief, there is a bolt. The right-hand one has a vegetable belly-band not found on the other. Above and below the bolts are plain lists.

The inscription is comparatively large and covers about the upper two-thirds of the plate. The letters are clear and well shaped.

VRBANVS AVG(usti) N(ostri)	4.2 cm
VERN(a) ET	4.1 cm
FABIA SVCCESSA	4.2 cm

There are triangular punctuation marks after VERN, ET and FABIA and possibly dot-like ones after VRBANVS and AVG. The I of FABIA is almost entirely missing.

Discussion

Urbanus was a home-born slave in the Imperial household. His was a fairly common name and a very suitable one for a slave born in the city of Rome itself,⁸ as Urbanus probably was, with its implicit meaning of "cultivated", which gives us a picture of a suave and well-educated servant of the Emperor. The name was accordingly used by several other Imperial slaves and freedmen.⁹ Successa seems also to have been a popular name.¹⁰

The term *Augusti nostri*, especially the word *nostri*, which has an emotional rather than a legal flavour, also serves as a dating criterion. Except for some doubtful cases in the reign of Trajan, the usage seems to have

begun in earnest during the time of Hadrian or slightly later.¹¹ Also the term *verna* is uncommon in this connection before Hadrian.¹²

In all likelihood, Urbanus, still an Imperial slave, and Fabia Successa, a free-born or freed woman, were living together as married. This was not such an uncommon phenomenon as one would think, Imperial slaves being considered desirable marriage partners even for free women.¹³

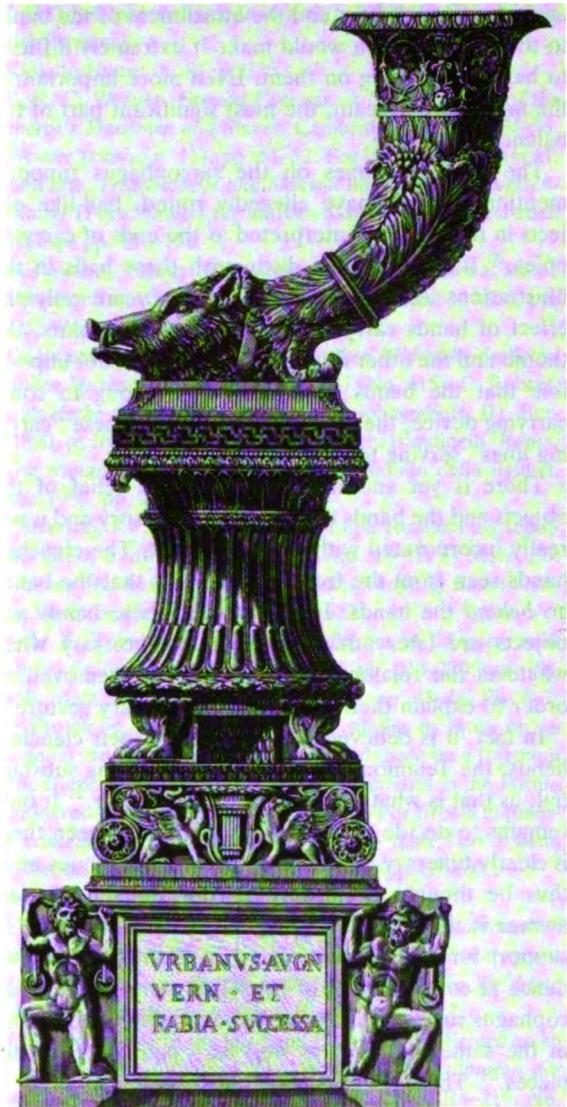
The date suggested by the inscription is supported by the decoration. The Telamones have their closest parallels in the Telamones of two sarcophagus supports in the Musei Vaticani found in a tomb near the Porta Viminalis dated by brick stamps to 132–134 A. D.¹⁴ Another similar Telamon is carrying a *clipeus* with a *lupa romana* on a sarcophagus in Ostia, dated by Matz to early Antonine times.¹⁵ The Erotes seem equally at home in a Hadrianic context, his being a time highly productive of small, fat children with wings.¹⁶

The shape of NM sk 189 is strange for an ordinary cinerary urn. The recess in the top may or may not be original. Such recesses were generally provided with a raised border around the top, corresponding with a depression in the lid.¹⁷ The absence of such a border may, of course, be explained if the top has been cut down, as it well may have been, to accommodate the "monument" shown by the plates engraved by Piranesi. In fact, the top has been at least partly cut down, as is shown by the hands of the Telamones, which are not completely preserved. However, if a lid was placed only on the central part of NM sk 189, it would leave the Telamones without a load to carry (see below).

The outer ends of the top are decorated with a flower ornament. The surface has been cut down, leaving the flat peak on the inner sides. This flower ornament, found, for instance, on the design for a chimney-piece recommended by Piranesi, is surely an addition by the restorer.¹⁸ The peaks on the inner sides of the flowers may perhaps indicate the level of the original top surface.

It is quite obvious from the difference between them that at least one of the Erotes has been reworked in later times. The likeliest candidate for this is the right-hand one. Not only is the surface cut deeper into the stone, but there seem also to be discernible some remains of longer locks at the nape of the neck.¹⁹ While he was at work, the restorer probably added the touches to the torch and wing.

Most of the back is not preserved and the original depth of the piece is thus not known. The bolts were



probably added by the person who restored the piece and added the relief at the back, because the borders surrounding the bolts unite NM sk 189 very harmoniously with the foreign piece at the back, as shown by the plate by Piranesi.

We must now return to the Telamones. Their hands are clenched, which would seem a strange gesture for someone carrying a burden. The outer hand is also somewhat more highly placed than the inner one, and the top surface represented by the flat peaks seems to be above both hands. The position of the hands may seem to be explained by the bands with the round

objects attached, held up by the Telamones, but these bands and objects in fact give rise to more questions than they answer. The general shape of the objects is similar to the *tymanon* carried by the left-hand Eros, but, doubled or rather quadrupled as they are here, that cannot be the explanation. They might have been interpreted as cymbals had it not been for their number, the slightly odd way in which they are attached to the long bands and the difficulty of explaining satisfactorily what two Telamones would be doing with so many cymbals held in this uncharacteristic fashion. The objects might seem to be parts of a balance, were it not

again for the numbers and the attachment of the bands to the objects, which would make it extremely difficult to balance anything on them. Even more important is the fact that the beam, the most significant part of the balance, is missing.

The two Telamones on the sarcophagus supports mentioned above have allegedly round, ball-like objects in their hands, interpreted as the ends of carrying poles.²⁰ It is difficult to distinguish these balls in the illustrations and it is possible that they are only the effect of hands carrying a burden on two points, the thumb and the other fingers. It is, however, not impossible that the bands of NM sk 189 belong to some carrying device, the objects at the ends of these "carrying lines" serving to keep the lines in order.

There is yet another alternative. The relief of the objects and the bands is very low and cursory and is not really incorporated with the Telamones. The clenched hands seen from the front show clearly that the bands go *behind* the hands. It may be that these bands and objects are later additions, deemed necessary when whatever the Telamones carried had been removed, in order to explain their otherwise unnecessary gesture.

In fact, it is believed that, in spite of their clenched hands, the Telamones once carried something substantial, as that is what Telamones are mainly for.²¹ It only remains to decide what. The inscription between them is clearly funerary in character and the Telamones must thus be thought of in such a context. The likeliest answer is that NM sk 189 was once used as a base or support for a funerary monument. There is some evidence in corroboration of this. There are the two sarcophagus supports mentioned above, with another pair in the same museum, as well as a couple of further pieces.²² These pieces were bar-shaped and used in pairs. In one case, a Telamon is placed, like those on NM sk 189, on the long side of a fairly large object with a length of c. 70 cm.²³ The Telamon is described as a nude, bearded man with both arms raised and kneeling on one knee. A further example, although of much greater size, is a base found in Sparta and showing a man carrying a globe on one side and a Nike on the other.²⁴ This last object has been interpreted as a sarcophagus base.

The Eros with a torch is also a suitable motif for a funerary base or support and is found on at least one: a nude Eros with crossed legs is leaning on a torch turned downwards.²⁵ One hand holds a wreath.

If NM sk 189 can indeed be interpreted as a base or support, it remains to decide what type of funerary

monument once rested upon it. It is too long for a cinerary urn and would seem too short for a sarcophagus placed lengthwise. The two elevated parts on the top of NM sk 189 may indicate that the ends of the piece were higher than the rest of the top surface and that the two ends took the actual weight of the funerary monument, rather in the manner of the bar-shaped supports mentioned above, but, even so, the monument could hardly have surpassed the base much in length. That would mean a child's sarcophagus, which the inscription makes unlikely. It may, of course, have been placed on the short side of a sarcophagus with a corresponding piece at the other end. The odd thing is the inscription in such a case being placed on the short side, but inscriptions were often a difficult thing to incorporate in the decoration of a sarcophagus and were often placed in secondary places, even inside.²⁶ In the cramped space of a tomb, it would be quite natural for some sarcophagi actually to be seen first from the short side.²⁷

Another explanation that would also take into account the recess in the top is that it is a monument half-way between a cinerary urn and a full-grown sarcophagus. It may be compared, for instance, with some *kline* monuments which have a corresponding length.²⁸ Some of these monuments were not hollow underneath and are suggested to have been placed on a built tomb or directly on the floor. The inscriptions are sometimes placed below the *kline* between the legs and in some cases within a moulded frame, of a different shape, however, from that on NM sk 189.²⁹ *Klinai* on this type of monument never seem to have other than ordinary couch legs,³⁰ and, however pleasing it may seem to have the two Telamones carrying the bed of the deceased, this may not be the answer. A lid covering the whole top of NM sk 189 and turning a cinerary urn into something more like a small sarcophagus would undoubtedly explain many of the inconsistencies.³¹ There is, however, so far no evidence at all that such a lid ever existed.

An alternative, but less likely, explanation is that NM sk 189 is part of the architecture of a columbarium. In that case, the recess in the top would be original. The two Telamones would be carrying some architectural element, for instance, columns at the sides of the niche with the urn; the inscription would be a *titulus* and the moulded shape on the bottom side would be the beginning of the next niche below or an opening of some sort. The missing back would be easily explained, as the piece would have been cut away from the wall.

However, sculpted decoration seems to be rare in columbaria; it is difficult to explain the Erotes on the sides and the existence of the decoration of Telamones on several other sarcophagi supports very similar to NM sk 189.

All in all, most of the facts seem to point to an interpretation of NM sk 189 as a base or support for a funerary monument or perhaps as a funerary monument itself, i.e. a cinerary urn masked as a very undersized sarcophagus: the motif as such, the shape and measurements of the object, the position of the inscription plate and the decoration. Last of all, the dating of the piece suggested by both inscription and decoration would seem to suit this interpretation very well, placing the piece, as it would, in the period when sarcophagus production began and at the change-over from cremation to inhumation.

¹ E. Kjellberg, 'Piranesis antiksamling i Nationalmuseum', *Nationalmusei Årsbok* 2, 1920, pp. 115–176. See further Ch. Scheffer, *Roman Cinerary Urns in Stockholm Collections* (Meddelhavsmuseet, Memoir 6), Stockholm 1986, nn. 3 and 9.

² Kjellberg (*supra*, n. 1), p. 172. *Förteckning öfver skulpturabeten i marmor och brons samt modeller och esker i äfvensom gjipsafgjutningar efter plastiaka konstverk i National-Museum*, Stockholm 1868, p. 21, No. 189 (in the edition of 1911, NM sk 189 is called a *subsellium*). *Inscriptiones latinae musei regii holmiensis* (J. Sjöstedt pro gradu philosophico, praeside J. H. Schröder), *Upsaliae* 1836, p. 8, No. 7. *CIL VI*^{4:1} 29573.

³ G. B. Piranesi, *Vasi, candelabri, cippi, sarcofagi, tripodi, lucerne ed ornamenti antichi*, Roma 1778, Pls. 90–91 (according to the numbering of the plates in the copy in the Royal Library in Stockholm).

⁴ For instance, W. Altmann, *Die römischen Grabaltäre der Kaiserzeit*, Berlin 1905, pp. 134–135, No. 150, Fig. 111 (griffins surrounding a candelabrum). More similar in details are the griffins surrounding a lyre on the lower part of an altar in the Musei Vaticani (Altmann, p. 120, No. 122, Fig. 97).

⁵ Kjellgren (*supra*, n. 1), pp. 130–131 and 159, No. 20, Fig. 35. (Inv. Nos. NM sk 179 and 250–252).

⁶ Sjöstedt (*supra*, n. 2).

⁷ F. Matz, *Die Dionysischen Sarkophage* 4:2 (Die antiken Sarkophagreliefs, IV:2), p. 276, No. 139, Pl. 162 (Musei Vaticani). The *tympanon* is very similar to that on NM sk 189, including the thin, incised line following the border.

⁸ I. I. Kajanto, *The Latin Cognomina* (Commentationes Humanarum Litterarum, 36:2), Helsinki 1965, p. 311.

⁹ J. Toynbee & J. Ward Perkins, *The Shrine of St. Peter and the Vatican Excavations*, London, New York & Toronto 1956, pp. 106–108 and 118, n. 2:VIII, and Appendix A, No. 85 (*verna* and a member of the Aelii family, mostly freedmen of Antoninus Pius); *CIL VI*^{4:2} 33764 (a freedman of Trajan); *CIL*

VI² 4237 (an Imperial freedman); *CIL VI*² 8438 (a freedman of the Flavians).

¹⁰ Kajanto (*supra*, n. 8), p. 356.

¹¹ P. R. C. Weaver, *Familia Caesaris. A Social History of the Emperor's Freedmen and Slaves*, Cambridge 1972, pp. 54–56.

¹² Weaver (*supra*, n. 11), pp. 51–52. For *verna*, see further H. Chantraine, *Freigelassene und Sklaven im Dienst der römischen Kaiser* (Forschungen zur antiken Sklaverei, 1), Wiesbaden 1967, esp. pp. 170–172.

¹³ B. Rawson, 'Family Life among the Lower Classes at Rome in the First Two Centuries of the Empire', *CP* 61, 1966, pp. 74–75; Weaver (*supra*, n. 11), pp. 112–122.

¹⁴ O. Benndorf & R. Schöne, *Die antiken Bildwerke des lateranischen Museums*, Leipzig 1867, p. 287 (No. 415); C. Robert, *Mytologische Cyklen* (Die antiken Sarkophagreliefs, II), Berlin 1890, p. 168, No. 155, Pl. 54; R. Bianchi Bandinelli, *Roma. L'arte romana nel centro del potere* (Il mondo della figura), Roma 1969, pp. 274–275, Fig. 311.

¹⁵ Ostia 106, K. Schauenburg, 'Die Lupa Romana als sepulkrales Motiv', *JdI* 81, 1966, p. 267, Figs. 16–17; F. Matz, *Ein römisches Meisterwerk der Jahreszeitensarkophag Badminton*, New York, Berlin 1958, n. 83 on p. 137.

¹⁶ J. M. C. Toynbee, *The Hadrianic School. A Chapter in the History of Greek Art*, Cambridge 1934, pp. 214–230, esp. Pls. 49–50; Matz, *Meisterwerk* (*supra*, n. 15), pp. 41–48, Pls. 6–7. The Erotes on NM sk 189 are fairly similar to those on an octagonal urn in the Musei Capitolini and those on a fragment of the frieze from the temple to Venus Genetrix in the Forum (considered Trajanic by Matz, pp. 46–47). For Erotes in funerary contexts, see R. Stuveras, *Le putto dans l'art romain* (Collection Latomus, 99), Bruxelles 1969, pp. 33–63.

¹⁷ Scheffer (*supra*, n. 1), Figs. 6–7.

¹⁸ G. B. Piranesi, *Diverse maniere d'adornare i cammini ed ogni altra parte degli edifizi desunte dall'architettura egizia, etrusca e greca con un ragionamento apologetico in difesa dell'architettura egizia e toscana*, Roma 1769, Pl. 2.

¹⁹ Cf. the hairstyle of the left-hand Eros with the Erotes on an urn in the Musei Vaticani, G. Lippold, *Die Skulpturen des vaticanischen Museums*, III:2, Berlin 1956, pp. 214–216, No. 82, Pl. 102 (although these specimens have drilled locks). The hair of Trajanic and Hadrianic Erotes described by Matz, *Meisterwerk* (*supra*, n. 15), pp. 45–46, suits the left-hand Eros very well: 'Es ist wellig und halblang, ringelt sich an seinen Enden gern zu Locken, bedeckt die Ohren und kann auf dem Scheitel zu einen kleinen Zopf geflochten sein'.

²⁰ Benndorf & Schöne (*supra*, n. 14), p. 287.

²¹ Vitruvius, *De Arch.* VI.7.6: 'item si qua virili figura signa mutulos aut coronas sustinent, nostri telamones appellant, ... Graeci vero eos διλαντας vocant' (Vitruvi *De Architectura* (ed. S. Ferri), Roma 1960). L. Castiglione, 'Zur Plastik von Pompeji in der frühkolonialen Zeit', in *Neue Forschungen in Pompeji und den anderen vom Vesuvausbruch 79 n. Chr. verschütteten Städten*, Recklinghausen 1975, pp. 211–233. A. Schmidt Colinet, *Antike Stützfiguren. Untersuchungen zu Typus und Bedeutung der menschengestaltigen Arkitekturstütze in*

der griechischen und römischen Kunst, Frankfurt am Main 1977, esp. pp. 44–54. J.-R. Jannot, ‘Un ordre étrusque à telamons’, *Mefra* 96, 1984, pp. 579–600. F. de Clarac, *Musée de sculpture antique et moderne. Planches II. Bas-reliefs antiques et modernes, autels, cippes funéraires, vases, candélabres, etc., du Musée Royal du Louvre*, Paris 1828–1830, Pl. 257, No. 96 (three Telamones carry a candelabrum). Schauenburg (*supra*, n. 15), Fig. 43 (Musei Vaticani, Inv. No. 10609, a Telamon carrying a shield with a Medusa on a sarcophagus fragment). B. Andreea, *Studien zur römischen Grabkunst (MittRöm 9. Ergänzungsheft)*, Heidelberg 1963, p. 77, Pls. 1, 3–4 and 24–29 (the lowest register on the Velletri sarcophagus). See further nn. 14–15 above and 22–24 below and Schauenburg nn. 129–131.

²² *Supra*, n. 14. C. Robert, *Einzelmythen* (Die antiken Sarkophagreliefs, III:3), Berlin 1919, p. 383, No. 315, Pl. 100; Benndorf & Schöne (*supra*, n. 14), pp. 296–297 (No. 427); Bianchi Bandinelli (*supra*, n. 14), Fig. 312. F. Matz & F. von Duhn, *Antike Bildwerke in Rom mit Ausschluss der grösseren Sammlungen*, II, Leipzig 1881, p. 483, No. 3434 and probably p. 484, No. 3436. W. Altmann, *Architectur und Ornamentik der antiken Sarkophage*, Berlin 1902, p. 94. Schauenburg (*supra*, n. 14), n. 131.

²³ Matz & Duhn (*supra*, n. 22), p. 483, No. 3433.

²⁴ Altmann, *Grabaltäre* (*supra*, n. 4), p. 31, Fig. 20; H. Dresel & A. Milchofer, ‘Die antiken Kunstwerke aus Sparta und Umgebung’, *AthMitt* 2, 1877, pp. 417–418, No. 257 (the base was found on top of a grave). Height 58 cm; length at the top 177, at the bottom 90 cm; depth at the top 63, at the bottom 50 cm.

²⁵ Matz & Duhn (*supra*, n. 22), p. 484, No. 3437. An Eros on a sarcophagus in Wisconsin is similarly equipped with a torch and a tympanon, C.C. Vermeule, *Greek and Roman Sculpture in America. Masterpieces in the United States and Canada*, Berkeley, Los Angeles & London 1981, No. 217, p. 259.

²⁶ G. Koch & H. Sichtermann, *Römische Sarkophage* (HdA), München 1982, pp. 25–26. H. Brandenburg, ‘Der Beginn der

stadtrömischen Sarkophagproduktion der Kaiserzeit’, *JdI* 93, 1978, p. 282, Figs. 3–4.

²⁷ F. Coarelli, ‘Il sepolcro degli Scipioni’, *DdA* 6, 1972, esp. pp. 52–53 (examples of sarcophagi with inscriptions on their short sides, the position of the inscription being determined by the position of the sarcophagus in the tomb).

²⁸ Musei Capitolini, Inv. No. 1999, H. Wrede, ‘Stadtrömische Monamente, Urnen und Sarkophage des Klinentypus in den beiden ersten Jahrhunderten n. Chr.’ (in Zweites Symposium über die antiken Sarkophagreliefs), *AA* 1977, pp. 400–402, Figs. 73–74; H. S. Jones, *A Catalogue of the Ancient Sculptures Preserved in the Municipal Collections of Rome. The Sculptures of the Museo Capitolino*, Oxford 1912, pp. 72–73, No. 2 (length 74 cm, height 62.5, depth 43.5). Musei Vaticani, Inv. No. 1565, H. Wrede, ‘Klinenprobleme’, *AA* 1981, pp. 99–101, Figs. 17–18; W. Amelung, *Die Sculpturen des vaticanischen Museums*, I, Berlin 1903, pp. 662–663, No. 533, Pl. 70 (length 77 cm or 78 cm (Wrede), height 43 cm). Musei Vaticani, Inv. No. 3107, Wrede, ‘Stadtrömische ...’, p. 412; *idem*, ‘Das Mausoleum der Claudia Semine und die bürgerliche Plastik der Kaiserzeit’, *RömMitt* 78, 1971, pp. 131–132, Pl. 78:2 (length 83 or 91 cm (different in the two articles) height 28 cm, depth 27–32 cm).

²⁹ Wrede, ‘Stadtrömische ...’ (*supra*, n. 28), Figs. 86 (whereabouts unknown), 90 (Museo delle Terme), 100 (Musei Vaticani, Inv. No. 565) and 103 (Palazzo dei Conservatori, Inv. No. 69). See also Musei Capitolini, Inv. No. 1999, in n. 28 above. The latter and the monument in Fig. 86 have moulded frames.

³⁰ The eagle feet on a *kline* were proved by Wrede to be later reworkings, ‘Klinenprobleme ...’ (*supra*, n. 28), pp. 96–99, Figs. 13–15.

³¹ Wrede (‘Stadtrömische ...’ (*supra*, n. 28)) discusses the intervening position of the *kline* monuments, too large to be urns, too small to be sarcophagi proper. We must think of NM sk 189 in the light of such untypical monuments.

The Swedish Carthage Excavations

Preliminary Geodetic and Cartographic Studies

Introduction

Carl-Gustaf Styrenius

The Swedish Carthage Excavations constituted a part of the UNESCO programme to save the ancient city. These excavations were carried out in 1979–80 under the direction of the present author, with Dr Bengt Peterson as assistant director and Miss Birgitta Sander as field director. Funds for the excavations were provided by the Swedish Commission for Technical Co-operation (BITS).

The project was from the beginning planned in three campaigns, to take place during the years 1979–1981. After the first campaign in the spring of 1979 (*Medelhavsmuseet Bulletin* 14, 1979, pp. 57–86), it turned out that the owner of the excavation site wanted to start building a villa on his plot immediately. The Swedish team was then suddenly confronted with the need to carry out an urgent salvage excavation and had to proceed to a second campaign in the autumn of 1979 (*Medelhavsmuseet Bulletin* 15, 1980, pp. 73–97).

During the second campaign, it became clear that a Late Roman bath with adjacent streets had been found. After negotiations with the Tunisian archaeological authorities, a positive agreement was reached. The availability of the site was guaranteed for a third campaign and prospects were held out of the possible preservation of the remains or part of them. The third campaign could take place during the spring of 1980 (*Medelhavsmuseet Bulletin* 16, 1981, pp. 75–94).

After the excavations had been completed, a plan was presented from the Swedish side to cover some 400

m² of the excavated area with a roof, in order to create an archaeological crypt, covering the most important parts of the Late Roman bath, as well as the decumanus and the cardo streets. The proposal was approved and after the crypt was completed, the landowner's villa, garden and swimming pool were built on top. On 25 June 1983, the crypt was finally inaugurated as a kind of subterranean museum and officially handed over to the Tunisian archaeological authorities.

The work on the excavated material was delayed for financial reasons. However, in the autumn of 1985, the board of the Swedish Commission for Technical Co-operation made a decision to sponsor also the final publication of the scientific work. In this, the field director, Miss Birgitta Sander, will give a general description of the excavations, the architect, Miss Catherine Gerner, will describe the architectural remains, the land-surveyors, Mr Åke Olson and Mr Björn Johnsson, will present the geodetic and cartographic survey, the architect, Mr Kjell Aage Nilson, will present the conclusions of this survey as regards the town plan of ancient Carthage, and Mr Harald Nilsson, of the Royal Cabinet of Coins and Medals in Stockholm, will publish the coins. All the rest of the material will be published by different Swedish and foreign scholars, but for some of the find material suitable authors have not yet been found.

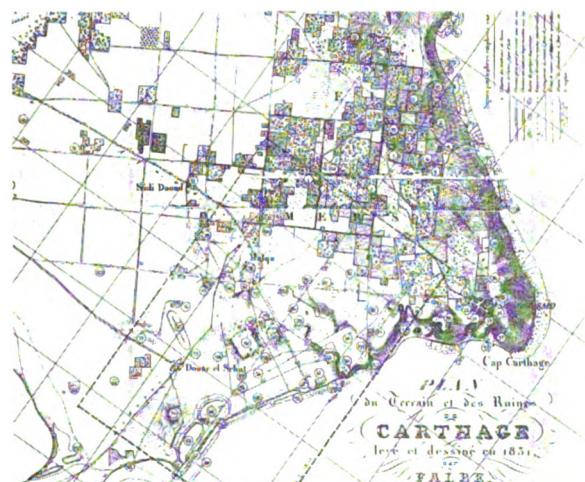
The publication programme was discussed with Dr M'hamed Fantar, Directeur-Général de l'Institut National d'Archéologie et d'Art (INAA), during his visit to Stockholm between 29 September and 5 October 1985 at the invitation of the Swedish Embassy in Tunis.

The Ancient Town Plan of Carthage

Kjell Aage Nilson

Along the Mediterranean coast, the ancient town of Carthage, with its strictly orthogonal town plan, extended straight across the hilly terrain. The town consisted of streets and rectangular blocks, whose long sides ran parallel to the coast. The principal streets crossed each other on Byrsa, the most important hill in the town, where the temples and other monumental buildings were situated.

As early as the beginning of the nineteenth century the Danish Consul-General in Tunis, C. T. Falbe, carried out a cartographic survey and measured the monuments visible in Carthage at that time. His map of the regular plan is of very great interest. This map shows, among other things, the relation between the town plan and the adjacent agricultural area.



At the beginning of the present century, M. Sauvage reconstructed the streets of Carthage on the basis of the sewerage system, and later P. Davin made an accurate measurement of the blocks and streets on the basis of some important public structures.

During the nineteen-seventies and -eighties, archaeologists from several countries carried out excavations under the aegis of the "Save Carthage" project and, among other things, tried to locate the street system. In this work, the lack of a key map was obvious. It is very difficult to relate streets, blocks, etc. to each other and it is also very difficult to make a co-ordinated map of the ancient town plan.

From April to June 1979, a geodetic and cartographic survey was carried out by Mr Åke Olson of Lund. This survey, which was described in *MM Bulletin* 14, p. 58–64, had as its main purpose to connect the topographical positions of the Swedish archaeological excavations to the Northern Tunisian Grid System (System Lambert) and to set out a grid network on those sites. Later, after requests from other groups, the geodetic survey was extended and altogether nine excavation sites were connected to this geodetic system. Cf. map below p. 90.

On the Swedish excavation Site A, which is situated on the north-eastern slopes of the Byrsa Hill, the Acropolis of Carthage, there is an ancient building, which is with very great certainty the original street corner in the Roman town plan (Colonia Iulia). This point, which lies only one block from the intersection of the principal streets (groma), is of extreme importance in further investigations of the ancient town plan.

When the work of trying to relate that building to the ancient principal streets, which were found within the French sites of the Byrsa Hill, began, the accuracy of the system of measurement used, was not good enough to secure an acceptable result. Nor were there reliable relations to streets, blocks and ancient structures in the area north of the Swedish excavation.

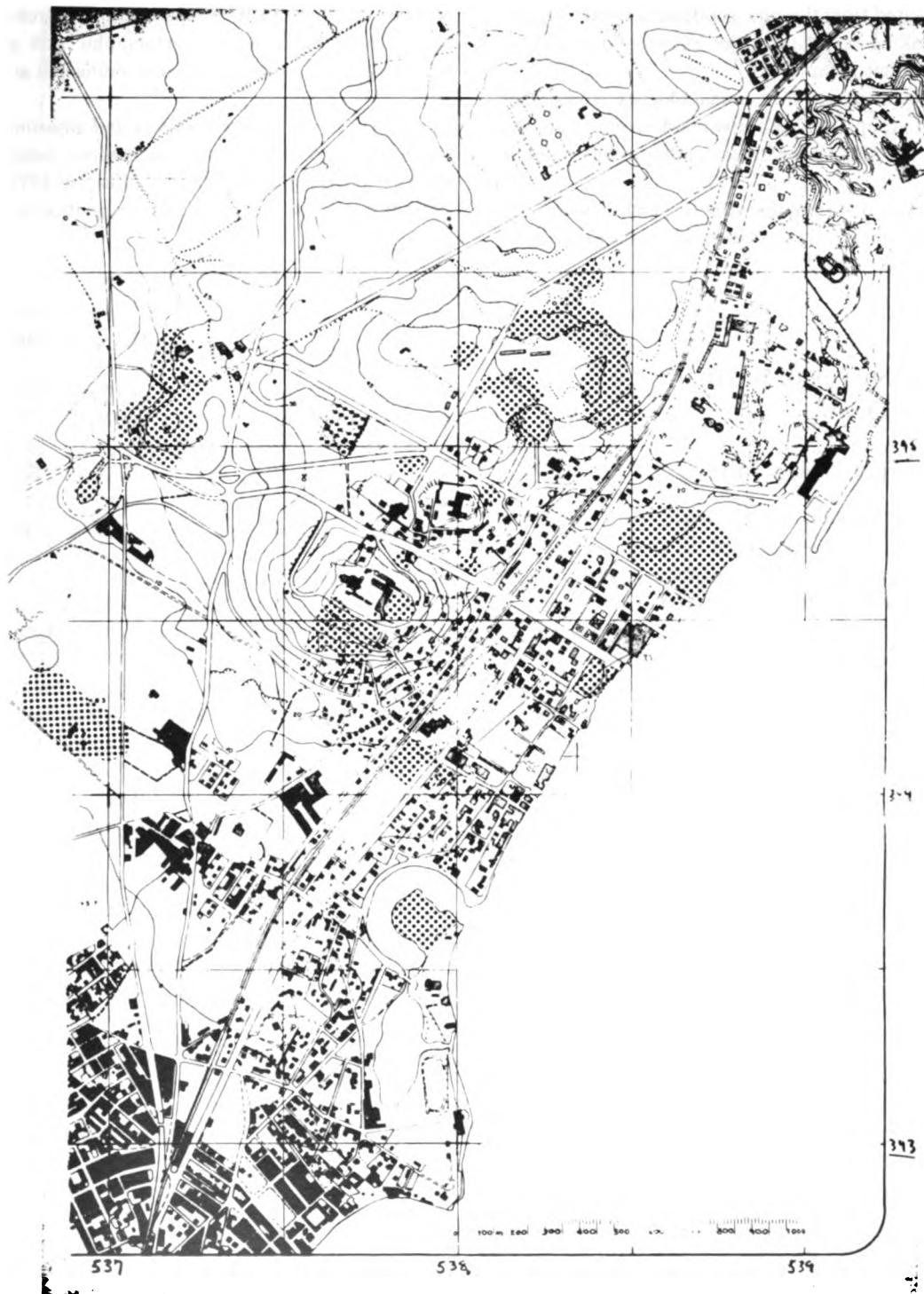
If the work on the surveyable investigations was to be continued, it was necessary to carry out some supplementary work on the Swedish geodetic system, above all, an extension to the north, in order to include also these parts of Carthage.

After careful planning, the first attempt to enlarge the geodetic system of 1979 was abandoned and during the spring of 1983, a quite new triangulation network of the highest accuracy was designed and drawn by Mr Åke Olson of Lund, an Mr Björn Johnsson of Malmö. This survey, which encloses the whole area of ancient Carthage, is an invaluable basis for further investigations of the town.

The main purpose of the investigations is to verify the dimensions of the principal streets and to find the exact intersections of those on the Byrsa Hill, in order to relate the building on the Swedish site to the ancient block and street system.

Another purpose of this work is to fit data about the known block and streets limits, together with the ancient buildings, into a co-ordinated, geodetic system and to study the connection between the networks in the town and in the country.

To make this work possible, a large number of distinct, ancient details in the block and street system has



Remains *in situ* of Roman Carthage have been placed in coordinates within the dotted areas.

been measured from this new geodetic network, together with striking details in earlier-known and newly discovered ancient monuments.

If this is of interest to archaeologists from other excavation groups, it is also possible to co-ordinate the structures on other sites with each other in this geodetic system.

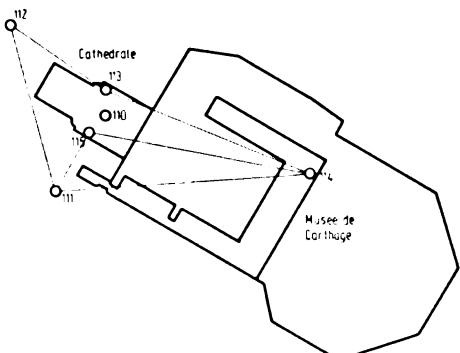
The work of co-ordinating streets, blocks and ancient buildings in this geodetic system has been in progress for some time.

Geodetic Survey of Carthage 1983: Technical Details

Åke Olson & Björn Johnsson¹

Introduction. In laying out Carthage, the Roman land surveyor, the agrimensore, used his groma. The result was an extremely strict pattern of streets and blocks. In order to check this pattern, to locate possible irregularities, to explain the reasons for these irregularities, to determine the length of the Roman foot as used at Carthage and to be able to locate and set out in advance objects hidden in the ground, a geodetic-triangulation network of high precision has been constructed. The programme was started already in 1979. A full network was created in 1983.

The triangular network. The network has been given a septangular shape, with the central point at the cupola of the cathedral of Saint Louis on the Byrsa Hill and with seven outer stations placed on the outskirts of the town. The reduction to centre net around the cupola consists of five stations.² This geodetic network is of a



The reduction to centre net around the cathedral.

normal type that can be used not only for archaeological purposes but also for cartographic and geodetic work in general or for all types of municipal activities.

Connection to the System Lambert and adjustment procedure. The co-ordinates of the stations listed below were obtained from the CEDAC office³ in 1979. These stations belong to the Tunisian triangulation network.

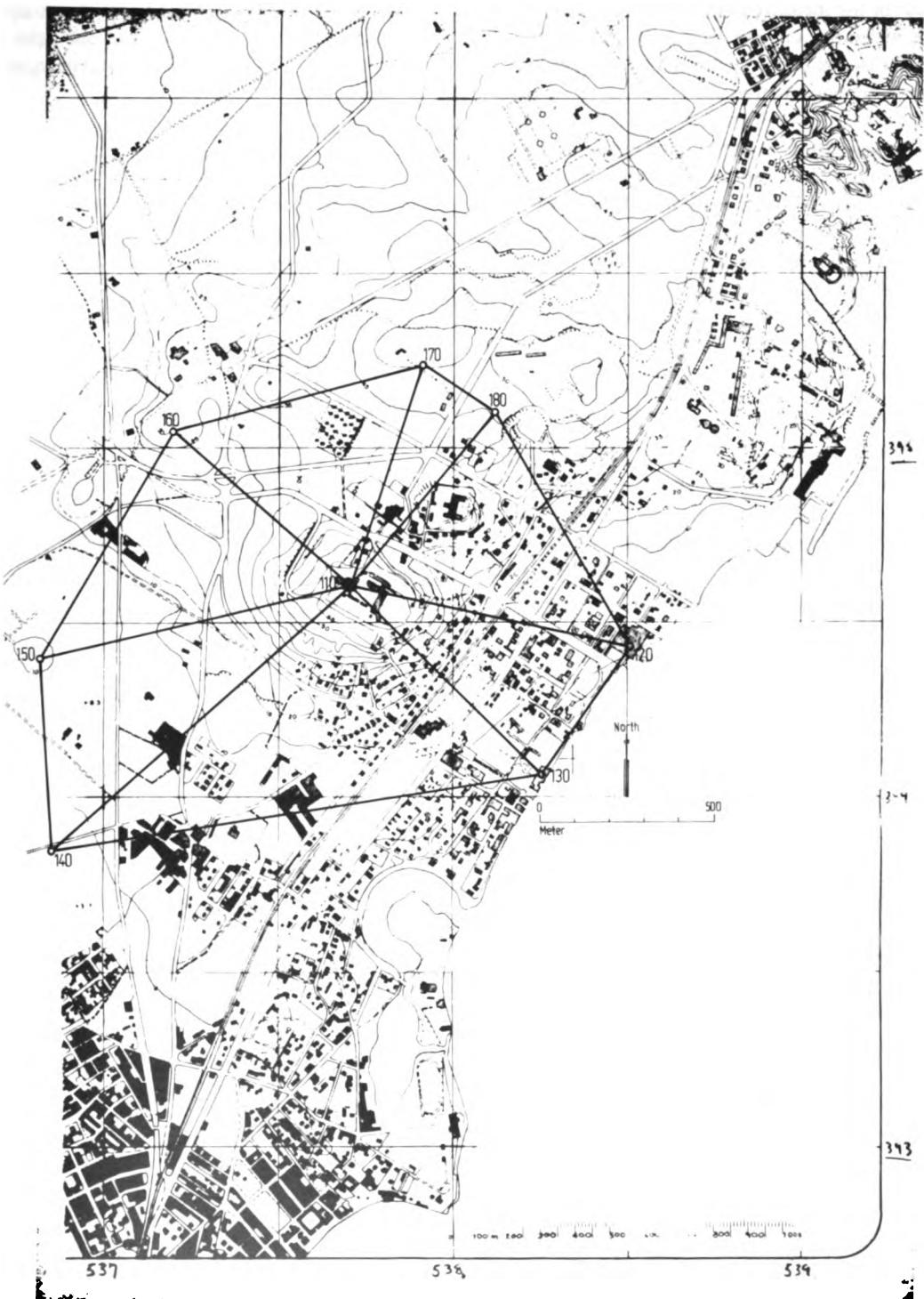
The System Lambert

	Metres	Metres
Top of dome	94609.02	37690.37
Astronomical point	94568.71	37662.34
Roof of Beylical Palace (5560)	94413.22	38507.18
Sports centre (5567)	94055.24	38262.60
Malga cisterns (5557)	95048.52	37180.88
Field east of Malga (5345)	95354.11	37930.84

The top of the dome and the astronomical point are regarded as belonging to a network of a higher order. The rest of the stations seem to belong to a lower order network. The co-ordinates of the top of the dome do not fit the present top of the dome. The accuracy of the points of lower order seems to be approximately ± 1 dm. This accuracy is not sufficient for the purpose of the survey.⁴ To eliminate these weaknesses, only the co-ordinates of the astronomical point, as listed above, were used as known co-ordinates. To orient the network an azimuth was observed using Polaris between the stations no. 114 and no. 130. This system will be called the System Lambert SMC 1983.⁵

The adjustment of the twelve unknown points was carried out in one step, using a Prime computer of the National Land Survey. The mean-square error was found to be less than 1.5 mm.

Instrumentation and measuring procedure. The survey was carried out by using a Wild T2 theodolite, and an AGA Geodimeter model 116. Ranging poles with supports were used as targets and for mounting prisms. The vertical and horizontal angles were measured in six full sets at each station. Slope distances were measured four times for a single direction. Temperature and air pressure were measured. In traversing, angles were measured in two full sets and the distances were measured twice. The horizontal distances reduced automatically by the instrument were used in the calculation of



The triangulation network of Carthage.

the traverses. In the measurement of the buildings, the angles were measured on one face only and the distances were measured once.⁷ More than 200 walls and blocks *in situ* were coordinated.

Azimuth. The azimuth was determined from stations nos. 114 and 130. At both stations, the horizontal angle between Polaris and the other station and the vertical angle to the star were measured in five full sets. The time was determined using a quartz-watch carefully compared with Swedish standard time by telephone close in time to the measurement. An illuminated prism mounted on a ranging pole was used as a target.⁸ The error for the azimuth can be estimated to be less than 0.0025 degrees.

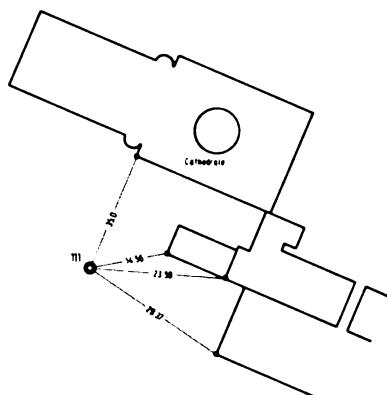
The stations. Stations nos. 113, 114, 115, 120, 130 and 140 are all situated on roofs and are marked with a steel nail 8 cm long and 0.8 cm in diameter, glued into a hole drilled in the concrete of the roof. Around the nails, circular plates of aluminium were placed. The plates were marked SMC 1983 and with the number of the station.

Stations nos. 112, 150, 170 and 180 are situated on the ground and are marked with galvanized steel pipes 2–3 cm in diameter, driven vertically into the earth. The tops of the pipes lie some few centimetres beneath the surface.

Stations nos. 160 (5557) and 5345 are marked with iron pipes 7 cm in diameter, set in concrete. These stations belong to the Tunisian triangulation system and were already marked.

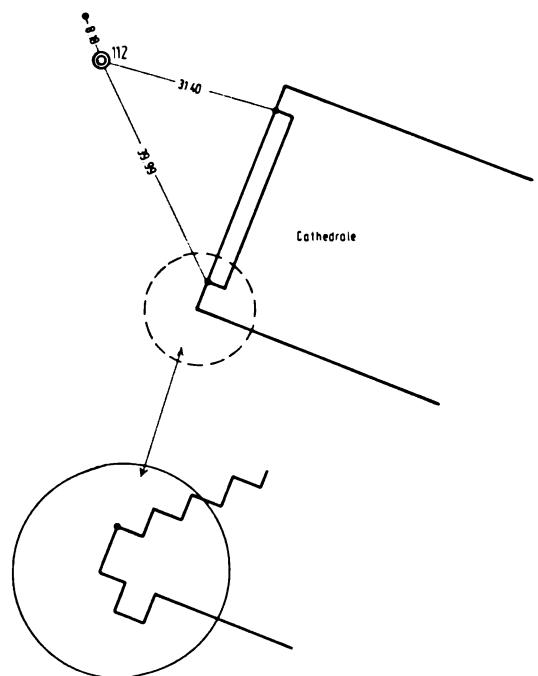
The top of the dome point no. 110 is the top of the main cupola, defined by the bottom of the leaning iron peg on the very top of the cupola.

The astronomical point no. 111 is situated 35 m to the south of the dome and is demarcated with a bronze plate set in concrete. The upper monument has been moved to the side of the station.



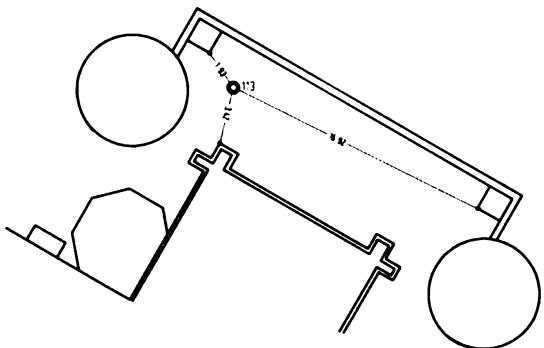
The astronomical point, station no. 111.⁹

Station no. 112 is situated on the ground west of the dome. This station is identical with station no. 12 of the 1979 survey.

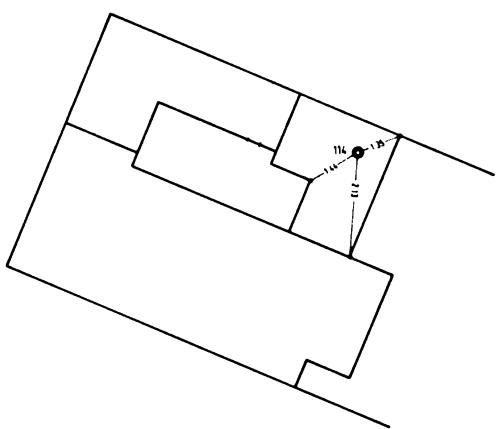


Station no. 112.

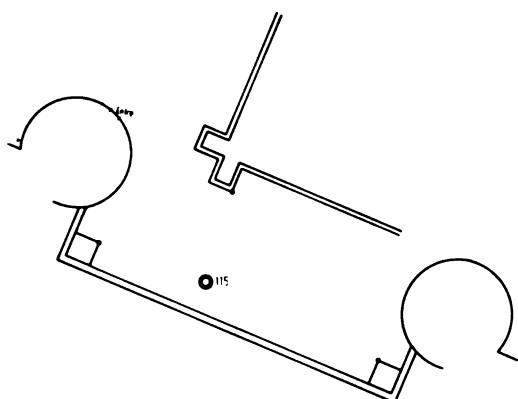
Stations nos. 113 and 115 are situated on the roof of the dome near the lower barrier on the north and south sides respectively.



Station no. 113

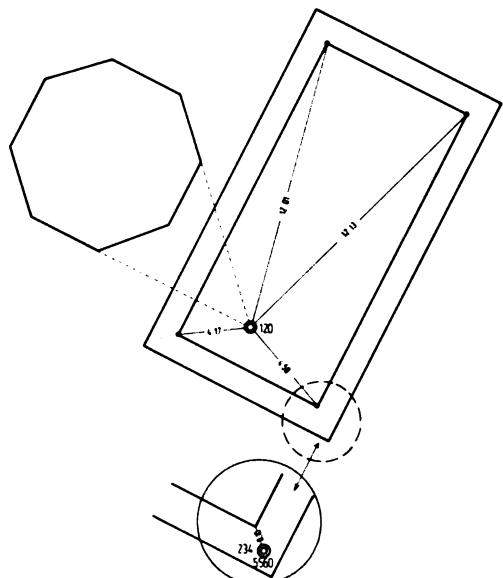


Station no. 114



Station no. 115

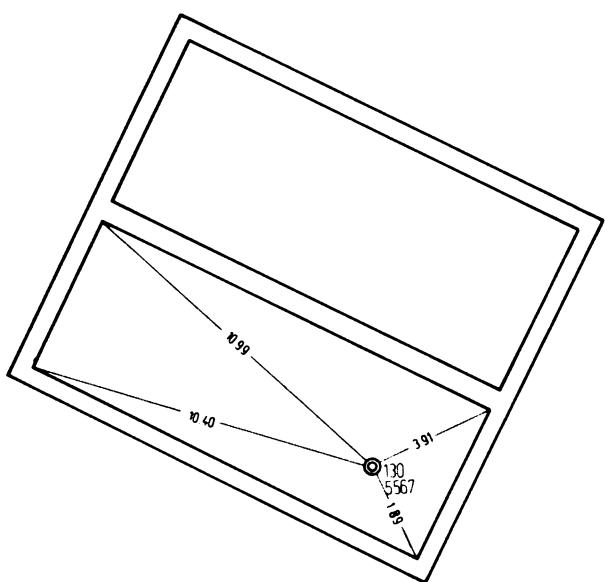
Station no. 120 is situated on the topmost part of the roof of the Palais Beylical. This station is not identical with the original one, no. 5560. Station no. 5560 is located on the wall at the south-eastern corner of the barrier, 10 cm from the inner corner. The station was originally unmarked but in 1979 was marked with a small nail. Between 1979 and 1983, a new covering was placed on the roof, which made it impossible to find the nail of 1979 again.



Station no. 120

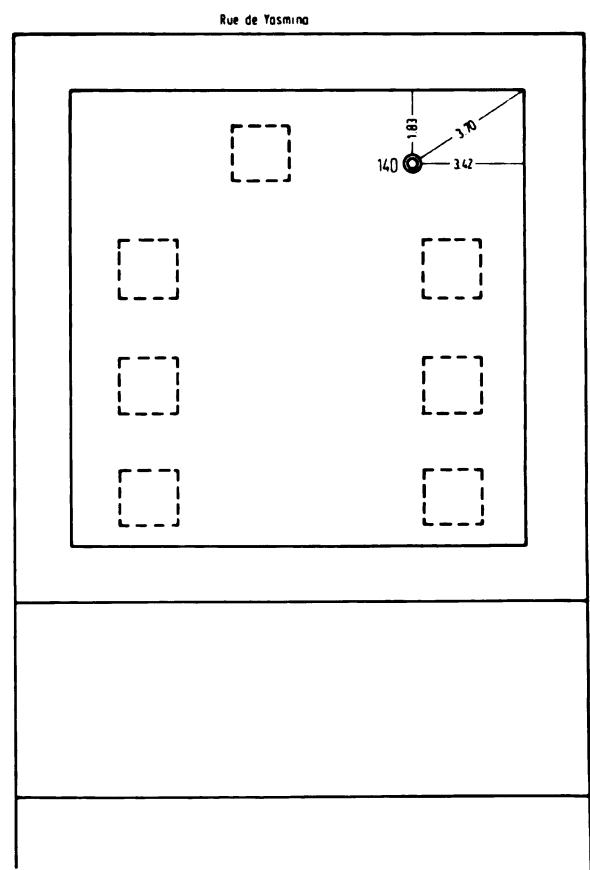
Station no. 114 is situated on the roof covering the stairs in the north-eastern part of the museum. The station is situated on the second highest level of the roof.

Station no. 130 is situated in the southern part of the topmost part of the roof of the Centre de la Jeunesse (sports centre) and is identical with station no. 5567 of the Tunisian triangulation network. The station was originally unmarked but was marked in 1979 with a cross cut in the concrete. In 1983, the cross was found again and the station marked with a steel nail.



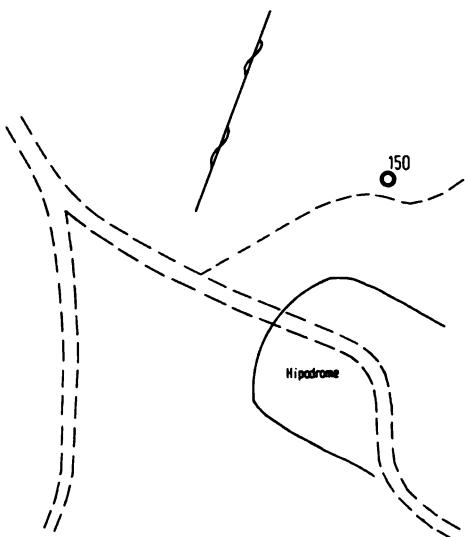
Station no. 130

Station no. 140 is located on the north-western roof of the Fabric Cosmo Plastic at Rue de Yasmina. The station was placed near the northern corner.



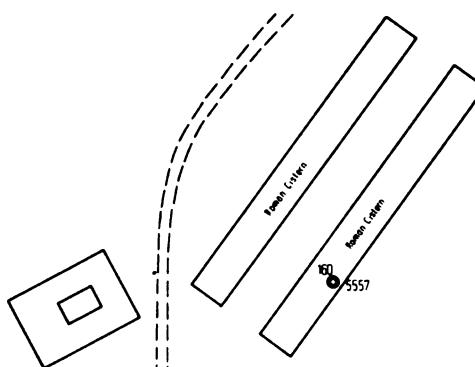
Station no. 140

Station no. 150 is located on the ridge of the small hill north of the west end of the hippodrome, just north of the path.



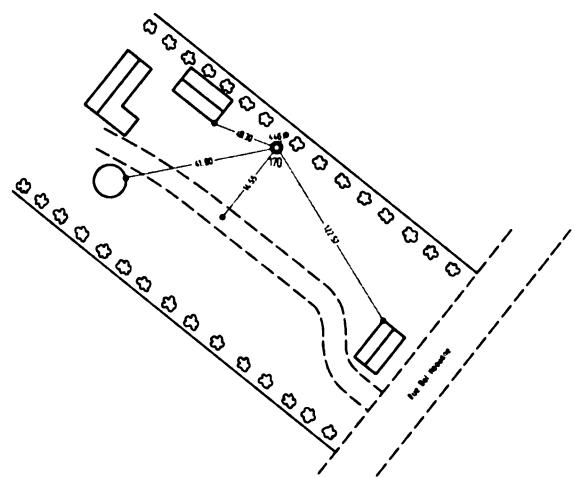
Station no. 150

Station no. 160 is identical with station no. 5557 in the Tunisian triangulation system. It is situated at the southern end of the more easterly of the two major cisterns, 300 m north-east of the centre of the amphitheatre.



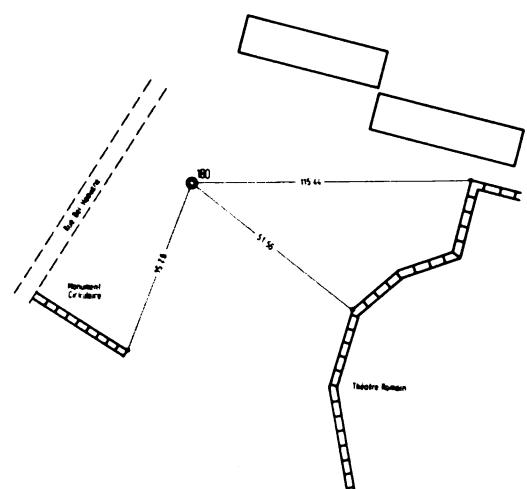
Station no. 160

Station no. 170 is situated close to the south side of the northern row of cypresses, 175 m west of Rue Bel Haouane.

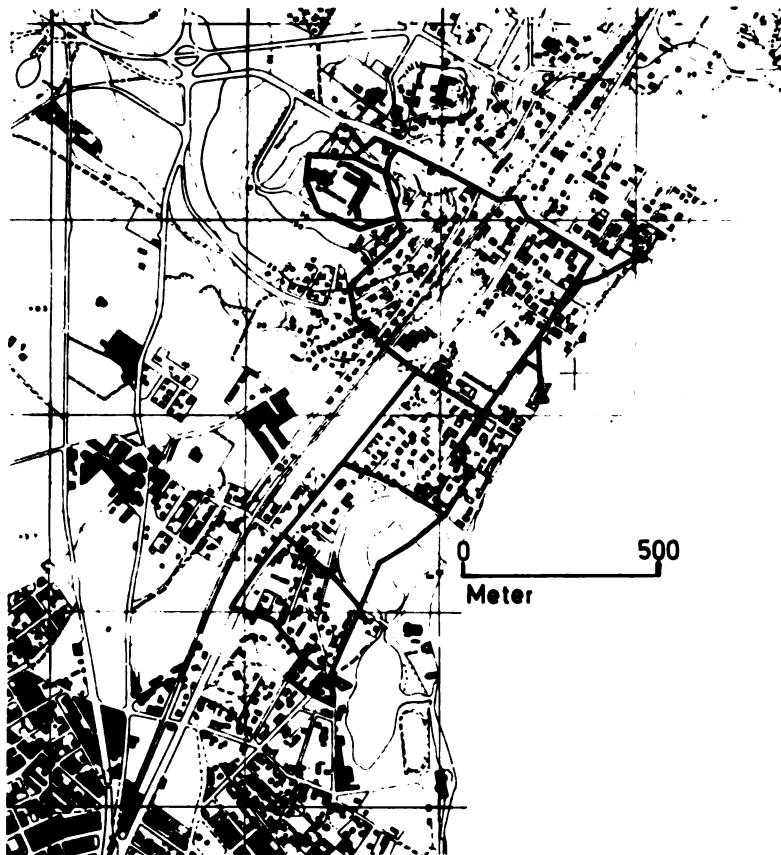


Station no. 170

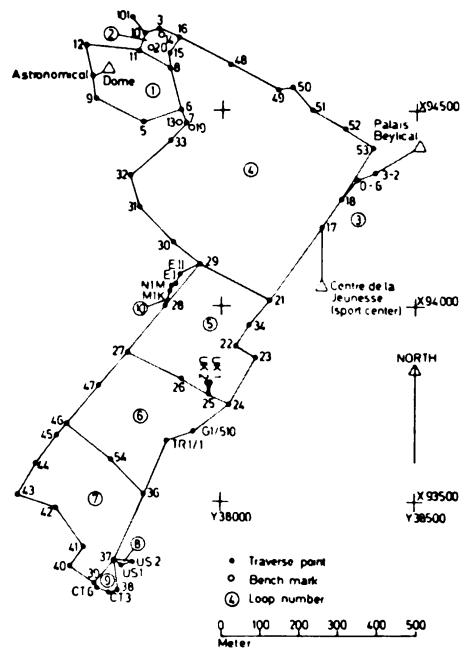
Station no. 180 is situated 50 m north of the excavation site of the circular building and 65 m east of Rue Bel Haouane. Stations nos. 170 and 180 replace a planned station in an excellent position on the roof of the apartment houses just north of station no. 180. Unfortunately, no access to this roof was permitted.



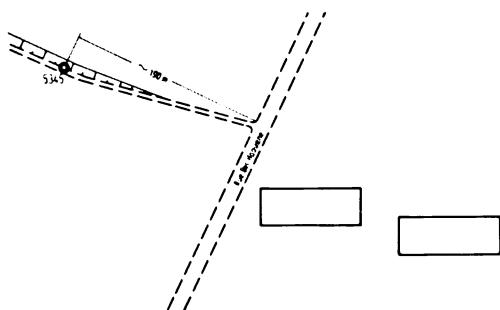
Station no. 180



The traverse network of 1979.



Station no. 5345 is part of the Tunisian triangulation system. It is situated on the remains of the Roman city wall 400 m west of the basilica and 175 m north-west of Rue Bel Haouane. The station was used for traversing.



Station no. 5345

The 1979 survey. During the first campaign of the Swedish Mission to Carthage, a survey was carried out.¹⁰ The purpose of this survey was to map the three Swedish excavation sites on the slopes of the Byrsa Hill. However, this survey was extended and six other excavation sites were connected by preliminary co-ordinates to the System Lambert. A new connection in the south was established in 1983 with the 1979 traverse network. This has made it possible to recalculate the network with co-ordinates in the system Lambert SMC 1983.

¹ Address of the authors: National Land Survey, Rörsjögatan 26 A, S-211 37 Malmö, Sweden.

² The field work of this survey, including reconnaissance, monumentation, measurements, preliminary calculations and negotiations with authorities, property owners and archaeologists, was carried out by the authors during a 16 day period in April 1983.

³ Mr B. Graham, CEDAC, Centre d'Etudes et de Documentation Archéologique de la Conservation de Carthage.

⁴ The French mission is also using the astronomical point but with the co-ordinates 94568.71 and 37662.84. Transformations between the systems are possible. The altitude above sea-level of the astronomical point is 56.75 m. (Personal communications in 1979 and 1983 from Mr Robine, architect of the French mission.)

⁵ SMC = Swedish Mission to Carthage.

⁶ The equipment was placed at our disposal by the National Land Survey of Sweden.

⁷ The co-ordinates of the measured walls and blocks are being kept by the Museum of Mediterranean and Near Eastern Antiquities, Medelhavsmuseet, Stockholm, for further analysis.

⁸ The calculation of the azimuth was made by Dr Bo Johnsson, of the National Land Survey, Gävle, Sweden.

⁹ The fair drawings in this report have been made by Miss E. Jönsson, of Malmö. The reproduction has been made by ÖLM-Repro, of Malmö.

¹⁰ The result of the survey in 1979 was published in *Medelhavsmuseet Bulletin* 14, 1979.

Activities 1985–1986

Carl-Gustaf Styrenius

During the period from 1 July 1985 to 30 June 1986, the Museum was able to continue its activities on a full scale, as the building programme, planned to start in the spring of 1986, was postponed by the National Board of Public Building. The new start is now fixed in October 1986 for building phase I. The third and last phase will finish in the spring of 1988. When the programme has been completed, the Museum will have gained several advantages: new, climatized store-rooms in the basement, a new section devoted to Egyptian tombs and mummies, and a new hall of 160 m² on the ground floor for temporary exhibitions and other activities.

The National Board of Public Building has also other favourable plans for the Museum. A proposal has been made to move part of the Cyprus collections and the Cypriot sherd material, now stored in another part of the town, to a basement a couple of blocks from the Museum, which after repair would be appropriate for the purpose. This will considerably increase the accessibility of this material for scholars. Thus, all the stored collections of the Museum will shortly be moved and, in the meantime, access for scholars to these collections will be limited.

During the year, a small museum shop for books and souvenirs has been opened. Moreover, since 1 March 1986, a small coffee-room has been opened in connection with the shop.

The Egyptian Department has made a most important acquisition. It is the upper part of a statue in black stone dating from the 6th century B. C. and representing a man whose undamaged face constitutes one of the finest examples of classicizing Egyptian art. The man was a high courtier, but unfortunately the inscriptions do not include his name. The purchase became possible thanks to a private donation.

As a gift, the Museum has received a large sculptured head dating from the 12th century B. C. and representing a private man, an interesting complement to the Egyptian sculpture collections. Among other Egyptian acquisitions, the following may be mentioned: a prehistoric grave-boat with painted decoration, an Alexandrian marble head, a collection of Hellenistic terracotta figures and a collection of Arabic papyrus fragments, once brought to Sweden by the orientalist Carlo Landberg.

Among the acquisitions of the Graeco-Roman Department, two pieces of plastic art deserve special mention. The first is a small, Geometric, bronze horse dating from about 700 B. C. and given to the Museum by the Society of Friends of the Medelhavsmuseet. The second is a valuable addition to the collection of Roman portraits. It is a male, marble portrait of the so-called Pseudo-Vitellius type. It is a gift from an anonymous donor.

The exhibition activity continued. Within the major Islamic exhibition programme in Stockholm from May 1985 onwards, the Museum took part in the main exhibition entitled "Islam – Art and Culture", which was shown between 2 May 1985 and 1 January 1986 in the Museum of National Antiquities (Historiska Museet). It also had its own exhibition, entitled "Sherds of Paradise – Pottery from the Rubbish-heaps of Cairo", from 14 May to 22 September 1985. It showed for the first time a large selection of the thousands of pottery fragments from Fustat in the stored collections, giving a rich cross-section of Islamic pottery production during the period 1000–1500 A. D.

The exhibition activity was then concentrated on the exhibition entitled "Ulysses – Scenes from the World of Homer", consisting of different *Odyssey* motifs, as displayed both by Greek vases and coins and by 18th-



View of the exhibition Ulysses.



View of the exhibition The Face of Classical Antiquity.

century colour prints. The exhibition was shown from 25 October 1985 to 16 March 1986. Afterwards, it was sent on loan to other Swedish museums. The exhibition entitled "One Thousand Years of Greek Pottery" continued its tour to different Swedish museums and other cultural institutions.

On 26 June 1986, the exhibition entitled "The Face of Classical Antiquity" was inaugurated. It consisted of a selection of 24 portrait sculptures from the famous collections of the Ny Carlsberg Glyptotek in Copenhagen, partly portraits of emperors and partly portraits of anonymous men, women and children.

The excavation projects in Greece, at Asine in the Argolid, at Chania in Crete and at Paradeisos in Thrace, were, as usual, administered by the Museum.

The volume on the Late Mycenaean and Submycenaean material from Asine by Dr Barbro Frizell is now in print. At Chania, the final excavation campaign took place in 1984, with Dr Erik Hallager as field director for the Swedish part. During the summers of 1985 and 1986, extensive work on the excavated material was carried out. Dr Pontus Hellström has continued his work on the finds from the excavations at Paradeisos in preparation for the final publication.

During the year, the scientific work on the material from the excavations of 1979–80 at Carthage could be resumed after a delay for financial reasons. The Swedish Commission for Technical Co-operation (BITS) has now consented to sponsor also the publication work. In the present *Bulletin*, introductory notes are



Detail from the exhibition Ulysses.

given by the land-surveyors and by the architect concerning their efforts to increase our knowledge of the town plan of ancient Carthage.

The collections of black-figured and red-figured vases has been studied during the year for a new fascicle of *Corpus Vasorum Antiquorum*. Dr Pontus Hellström has continued his study of the architectural remains from the Swedish excavations at Labraunda in Caria between 1948 and 1953.

During the year, *Bulletin* 20, 1985, was published. It contained scientific articles on objects in the collections of the Museum.

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